OSTON'S NEW EXPOSITION CENTER AND STADIUM
Interim Report

CITY OF BOSTON: Thomas M. Menino, Mayor; Marisa Lago, Chief Economic Development Officer

Site And Market Analysis
for
Boston's New Exposition Center And Stadium.

Interim Report

October 1994

CITY OF BOSTON

Thomas M. Menino, Mayor
Marisa Lago, Chief Economic Development Officer

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OFFICE OF THE MAYOR
THOMAS M. MENINO

October 1994

To the residents of Boston:

For the past two years the question of developing a combined facility for hosting conventions and trade shows as well as football games and other sports events has been widely discussed. The Commonwealth of Massachusetts as well as the Massachusetts Convention Center Authority have undertaken studies. The State Legislature has discussed the merits of such a facility as well as the appropriateness of public financing.

The issue is of immense significance to the City of Boston and to the Commonwealth. The visitor industry is one of our region's strongest assets. A growing segment of visitors to the city are attendees at conventions, trade shows and exhibits. New and larger convention facilities would greatly enhance Boston's appeal. Were such a facility to be built in Boston, its location would affect profoundly the character and economic development potential of the area immediately adjacent to it. Its siting has implications for our economy, our neighborhoods, and our existing businesses and jobs.

For this reason, I instructed the Boston Redevelopment Authority this past spring to conduct a comprehensive planning study of all potential sites within the City of Boston. This report is comprehensive and thorough in its scope, and contains the BRA's detailed analysis and recommendations. It is intended to stimulate a broad public discussion of the many complex issues surrounding the development of an exposition center and football stadium and their possible locations. I am confident that this public discussions will help to assure that all residents of the City of Boston and the Commonwealth will benefit from the construction of any new facilities.

Thomas M Menino

Thomas M. Menino
Mayor of Boston

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Executive Summary

Mayor Menino has instructed the Boston Redevelopment Authority (BRA) to evaluate the planning issues surrounding the development of a convention and trade show facility, and a football stadium for the New England Patriots. In particular, the Mayor requested the BRA's recommendation as to whether an exposition center that would play host to trade shows and large conventions should be developed separately or together with a football stadium and, depending on that finding, which sites in the City of Boston would be most suitable for each.

As an initial matter, the BRA concurs with the view that Boston's existing supply of exposition space is no longer sufficient to meet the growing demand. The Hynes Convention Center has one of the highest occupancy rates of any convention center in the country, but is too small for a growing number of shows that require more space. For the most part, these are trade shows and conventions that would like to come to Boston but either their size requirements or requested dates cannot be accommodated at the Hynes. In addition, some trade shows that are at the Hynes now are expanding and are expected to outgrow the facility.

After an extensive analysis, the BRA concluded that the exposition center and football stadium should be built separately in different locations. While several factors contributed to this conclusion, the most compelling was that combining facilities for convention and trade shows with a football stadium virtually precludes all but the South Bay site which, in the opinion of the BRA, is not a desirable location for convention and trade show use. Furthermore, the needs and profiles of the groups that use convention and trade show facilities and sports facilities are dissimilar, infrastructure requirements vary, and costs would be substantially higher due to the necessity of building a covered or domed stadium that could be used -- in theory -- as exposition space between football seasons. As will be discussed, the BRA does not believe that domed stadium space is well-suited for expositions.

As for the appropriate size of an exposition center, an analysis of the market for traveling or rotating conventions and trade shows reveals that the great majority (95 percent) require 600,000 square feet of gross exhibition space or less. Moreover, above this 600,000 square foot level, a larger facility yields a diminishing return in terms of the number of attendees that it attracts into the region, a critical factor in determining economic impact. This occurs because, after a point, the largest shows take up more exhibition space but do not bring in proportionally more people.

Based on an estimate of the number and size of shows Boston is likely to attract, the BRA estimates that a facility with up to 600,000 square feet of exhibition space would allow Boston to accommodate the major share of large trade shows that the city presently cannot house. This additional space will create a demand for as many as 1,646 new hotel rooms by the year 2000. This is expected to double within the following decade, up to a total of approximately 3,259 hotel rooms by the year 2010. While trade shows bring additional demand for hotel rooms, this demand tends to be unevenly distributed. Therefore, to maintain a healthy occupancy rate, it is critical to site these hotels where they can service not only the exposition center, but also a strong and stable secondary market.

Having determined the size and desirability of separating these functions, the BRA re-visited the question of location. Given the smaller area required for a stand-alone exposition center, as opposed to a combined exposition center and football stadium, many more sites were available for consideration. Criteria for site evaluation included parcel size and configuration, transportation access, minimal adverse impacts on adjacent communities, site preparation costs, proximity to visitor amenities, and the likelihood of spurring the development of hotels in locations that could service both a convention and trade show market as well as other visitor markets. For a football stadium site, parcel size and the proximity to both high-capacity transit and multiple connections to major highways were paramount.

Of the 12 sites studied (including the expansion of the Hynes Convention Center), the BRA has concluded that the best location for an exposition center is C Street in the Fort Point Channel District, with Northern Avenue, also in the District, as a possible alternative. Further study of both sites is recommended.

Preliminary traffic analyses indicate that South Bay is the only site within the City adjacent to high-capacity rail (*i.e.*, MBTA Red Line or Orange Line) and with adjacent arterial roadway access that is large enough to accommodate a football stadium that would have limited impact on the surrounding neighborhoods. A comprehensive traffic analysis must be done, however, to determine whether or not an infrastructure upgrade would be required. The BRA suggests that the Commonwealth fund a further study of the South Bay site as a location for a football stadium. (Should the need arise, several sites can accommodate a temporary Olympic stadium where parking requirements would be considerably smaller.)

To help inform the discussion of public financing of new exhibition space, estimates of economic impact and tax revenue were made. In the year 2000, when the new facility opens, we

do not expect it to operate at full capacity because of a natural lag time in booking large trade shows. Nonetheless, even at the early date, the exposition center is estimated to attract 187,641 new attendees into the region. This would generate $225.5 million annually in direct and indirect economic output and approximately $12 million annually in tax revenue. Of this, the Commonwealth of Massachusetts would receive the major part, approximately $9.8 million annually, while municipalities would receive approximately 2.2 million. (These amounts are expressed in 1994 constant dollars. While inflation will have raised the actual dollar amounts, their economic significance is most readily understood in terms of today's prices.)

Anticipated new hotel development would be an additional benefit. Additional hotel demand would not be absorbed by Boston alone, but by other municipalities as well. The BRA estimates that approximately 43 percent of new hotel occupancy would occur in Boston and the remaining 57 percent in other cities and towns.

By the year 2010, we expect that the facility would be operating at full capacity and the corresponding attendance and associated economic activity would be much greater, reflecting the ten-year period when the trade show and convention industry will have adjusted to the new facility. In 2010, approximately 371,622 attendees would come into the region, generating $419.9 million in economic output and $23.2 million in total tax revenues.

For the purposes of this analysis, the term *exposition center* refers to a facility that would play host to trade shows and other large meetings, including conventions, that require a large amount of exhibition space. It should be noted that many conventions and business and professional association meetings now make extensive use of exhibits and require a large exhibition hall. The market analysis contained in this report studies both trade shows and those conventions and other meetings that require a large amount of exhibit space. Conventions and meetings that do not require a large amount of exhibit space are not precluded from Boston currently and thus were not considered in the market analysis. The program of the exposition center evaluated in this study includes a series of large spaces for the use of exhibitors, seating capacity of 10,000 for plenary sessions, additional separate rooms for conducting meetings, and ancillary facilities such as ballrooms, kitchens, banquet halls and offices.

Mayor Menino has also called upon the BRA to evaluate the planning issues surrounding the development of a baseball park for the Red Sox. Because of the complexities involved in the location of a baseball park, additional time is needed to complete a separate study. A discussion of issues related to the Red Sox and Fenway Park will therefore be deferred.

At this time, the BRA recommends that the Commonwealth fund further studies for the two final exposition center sites, including a local traffic analysis, a geotechnical survey and soil contamination tests. The South Bay site should be studied to determine the infrastructure required to handle the traffic demand associated with a stadium. In addition, a public review process should be established in which more detailed studies of the recommended sites and extensive public discussion can take place.

Introduction

For some time the question of building new or expanded facilities for conventions and trade shows as well as for professional football in Massachusetts has been debated and a number of studies undertaken. Several parties have come forward to propose sites for these uses. In response to Mayor Menino's request for a planning analysis of these issues, the BRA has prepared this study. In order to set the context for the BRA's investigation, a brief review of recent history is useful.

Commonwealth of Massachusetts: Coopers & Lybrand Study

In July 1992, the Commonwealth of Massachusetts, through its Division of Capital Planning and Operations (DCPO) and the Executive Office of Economic Affairs, hired the consulting firm of Coopers & Lybrand to prepare a feasibility study to determine the potential for developing a major sports complex in Massachusetts that could also include exhibition facilities. DCPO also issued a Request for Sites to identify a full inventory of possible sites for consideration as part of this feasibility study.

After studying several alternatives, the BRA in August 1992 submitted its proposal to site a professional sports complex in the South Bay area of Boston. The BRA's evaluation of South Bay rested on its development as primarily a stadium for professional sports events, with exhibition uses as a secondary consideration.

In November 1992, Coopers & Lybrand issued its interim report. The firm evaluated the sites and conducted a market analysis based on two development concepts -- a megaplex that combines exhibition and stadium components into one development and a stand alone, stadium only facility. Of the 21 sites reviewed, only seven met certain minimum requirements for further study, including the South Bay site. According to Coopers & Lybrand,

> *All of the sites which have met the minimum requirements will be subject to further analysis as potential stadium sites. However, based on the results of the market analysis and the strong preference by event promoters for a Boston location, only the Boston and Cambridge sites will be included for further review for potential megaplex locations.*

In February 1993, Coopers & Lybrand issued its final report, Megaplex, Convention Center, and Stadium Feasibility Analysis. In that study, four development concepts were considered:

> A **Megaplex** integrating exhibition and meeting space with enclosed fixed seating space that could accommodate convention and trade show events, as well as sports and other events such as concerts;
>
> A **Stand Alone Convention Center** encompassing dedicated exhibition and meeting space, that could accommodate major conventions and trade events, consumer shows, large meetings and conferences;
>
> **Stand Alone Stadium Facilities - domed** that could accommodate varying levels of sporting events, concerts, etc., on a year-round basis; and
>
> **Stand Alone Stadium Facilities - open air** that could accommodate varying levels of sporting events and other events, such as seasonal concerts, etc.

With respect to the market for exhibition space, Coopers & Lybrand stated:

> *The development of a megaplex or a stand-alone convention center with between 400,000 and 500,000 square feet of exhibition space would enable the Boston metropolitan area to accommodate the market demand which the area currently is unable to accommodate due to facility constraints.*

In evaluating sites, Coopers & Lybrand found that for a stand-alone stadium, Boston's South Bay site rated the highest, based primarily on its transit, rail and highway access, as well as on site planning and potential economic development considerations. The firm also developed conceptual layouts of two potential sites for either a megaplex or a stand-alone convention center, using both the Boston-South Bay site and a site proposed in Cambridge.

The Coopers & Lybrand analysis of potential public assembly facility development within the Commonwealth is contained within two reports, *Professional Sports and Exhibition Complex Feasibility Analysis, Interim Report,* November 4, 1992 and *Megaplex, Convention Center, and Stadium Feasibility Analysis, Final Report,* February 5, 1993.

Massachusetts Convention Center: Price Waterhouse Study

In 1993, the Massachusetts Convention Center Authority (MCCA) retained the firm of Price Waterhouse to estimate the market demand for convention facility space in Boston and to determine if existing facilities offered the size and types of space required to satisfy the present and future demand. The MCCA also directed Price Waterhouse to identify alternative methods of expanding or adding new convention space and evaluate the cost effectiveness of each development option.

The Price Waterhouse market analysis indicated that the addition of exhibit space, whether undertaken at Hynes or another marketable site (or both) would yield high occupancies in the existing Hynes space as well as in the new space, *i.e.*, that developing new space at another site would not adversely affect the Hynes. Price Waterhouse concluded:

> *Boston has far too little convention/exhibit space to meet the present and projected market demand. A major, well-located expansion is virtually assured of attracting large numbers of out-of-town delegates. Boston loses significant convention business because its primary facility, the Hynes Convention Center, is now too small to meet today's demand. And that demand is growing.*

The firm conducted an analysis of four development options and a no-build option, referred to as options A through D:

A. Add 200,000 square feet of exhibit space at the Hynes
B. Add 450,000 square feet of exhibit space at the South Bay site and no Hynes expansion
C. Add 650,000 square feet of exhibit space, split between the South Bay site and Hynes
D. Add 650,000 square feet of exhibit space at the South Bay site and no Hynes expansion.

In a subsequent or (phase II) analysis, Price Waterhouse also analyzed two additional development options, referred to as Options E and F:

E. A multi-purpose center with 650,000 square feet of exhibit space of which 450,000 square feet is dedicated exhibit space and the other 200,000 square feet is contiguous exhibit space with a fixed seating capacity of approximately 70,000, usable for conventions, trade shows and large spectator events, essentially a *megaplex*;

F. A multi-purpose center with 850,000 square feet of exhibit space of which 650,000 square feet is dedicated exhibit space and the other 200,000 square feet is non-contiguous exhibit space with fixed seating for 70,000.

Price Waterhouse's estimates of occupancy, attendance and operating revenues for these alternatives, as well as economic and fiscal impact analyses, are contained within its report entitled *Expansion of Boston's Convention Center Facilities, Final Report Phase I,* July 1993 and *Final Report Phase II*, September 1993.

Other Proposals

Throughout this period several other sites have been suggested by proponents of sports and/or convention facilities, including a football stadium in Kenmore Square; a site for a megaplex on Melnea Cass Boulevard; a convention center, football stadium and gambling casino on the Beacon Rail Yards site in Allston; the Boston State Hospital site; the Northern Avenue (Massport) site; and Suffolk Downs. Each of these has been included in our analysis, along with the BRA's examination of an expansion of the Hynes Convention Center, a parcel located on C-Street in the Fort Point Channel area, and South Bay.

The Red Sox and Fenway Park

During this time, the question of the future of Fenway Park has also been raised, specifically whether that facility might be rebuilt on site or moved to a new facility constructed in a new location. This is an issue of great concern to the City of Boston, but it is beyond the scope of the current study.

Some Industry Terms

An understanding of terms used by the trade show industry is relevant to this analysis. While some of these terms may be used differently in other venues, for the purposes of clarity and consistency in this analysis, these terms are defined as follows:

> **Trade Shows** are shows for representatives of a particular industry or professional group. (The Annual Meeting and Exhibition of the Society for Mining, Metallurgy and Exploration is one such example.) At trade shows, exhibitors display or demonstrate products, processes or services to attendees (usually professionals in the industry). Typically, a single large exhibition space is divided into compartments or booths with temporary dividers. Customarily, a large proportion (about 70 percent) of the attendees come from outside the local region. Approximately 30 percent of attendees are professionals of the industry or professional group residing in the local area. On occasion, the general public may be invited to attend; these shows are often referred to as "Tradesumer" shows or combination shows.
>
> **Consumer Shows,** sometimes referred to as public shows, cater to the general public and typically to a local audience. A general admission fee is charged. In Boston, popular examples of consumer shows are the Flower Show, the Boat Show, the Home Show and the Auto Show.
>
> **Conventions** consist for the most part of meetings, symposiums and conferences held by professional associations, trade groups and the like, such as the American Medical Association convention. Conventions may include an exhibition component and, for the most part, attract participants from outside the region.
>
> **Rotating Shows** are shows that are held in a different city each time the show is held. Only about 30 percent of the trade shows listed in the *Tradeshow Week Data Book* relocate each year. The balance of trade shows remain in the same location, generally because the industry has strong ties to that region.

Any one particular event may include elements of trade shows, consumer shows or conventions. Indeed, industry observers report increasing overlap of function -- conventions are including more exhibits, while trade shows are including more meetings and seminars. Multiple bookings, where two or more shows in the same facility are run simultaneously, are also common.

A particular facility may develop a niche in one type of event, although not entirely to the exclusion of other types of events. In Boston, Bayside is known primarily for consumer shows, while the World Trade Center is popular for small regional trade shows. The Hynes has a reputation as an ideal national convention site.

In the two years that a facility of this nature has been a subject of public debate, many names have been assigned to it. For this study, the following terms will be used.

Megaplex is a term that has been used to describe a complex with the following two components. One component is a facility designed exclusively for hosting conventions and trade shows. The other component is a stadium with seats fixed in place, which is used primarily for playing sports, but can also be used for additional exhibition area or for very large meetings. The two components are typically adjacent and may also be contiguous, sharing a common boundary that can be opened for passage.

Exposition Center is the name the BRA has chosen to refer to a building programmed exclusively for large trade or consumer shows, multiple bookings of smaller shows, and large conventions. An exposition center would include a series of large spaces for the use of exhibitors, a seating capacity of 10,000 for plenary sessions, additional separate rooms for conducting meetings, and ancillary facilities such as ballrooms, kitchens, banquet halls and offices. No provision for athletic events is included.

Exhibition Hall refers to the single large space available for exhibiting products or demonstrating services. The size of this area and the flexibility with which it can be laid out are critical factors to event organizers in choosing where to hold events.

Gross Exhibition Space is the square footage of the exhibition hall. It includes the spaces for the use of exhibitors, which are typically set off by temporary dividers separating them from adjacent circulation space or aisles. Throughout this report, unless otherwise noted, exposition facilities will be described in terms of their gross exhibition space, an amount roughly equal to half the size of the entire complex.

Net Exhibition Space refers only to that portion of space within the gross exhibition space exclusively available for and rented to exhibitors or, in other words, only the *leasable* floor space typically contained within the partitioned booths. It does not include the aisles. Net exhibition space as a rule measures about 50 percent of gross exhibition space.

CHAPTER 1

Exposition Center & Football Stadium: Combined Or Separate?

Key Conclusion:

The BRA recommends that if a football stadium were to be constructed, it should be built separately and in a different location from an exposition center; better siting, facility design and operation can be achieved.

Among the issues at the forefront of this debate is the question of whether to combine an exposition center serving the convention and trade show industry with a football stadium, *i.e.*, a megaplex. The BRA believes that the disadvantages of combining these facilities outweigh any perceived advantages. The BRA therefore recommends that the exposition center and football stadium be separated and built in different locations. The following factors -- site size, traffic and parking, facility marketing and scheduling, urban scale and design, and costs and benefits -- all suggest that separate facilities in different locations are preferable.

Site Size

As an initial matter, combining these two uses requires an extremely large structure and, as a consequence, also requires an extremely large site, of which there are relatively few in Boston. In past studies, the focus on combining these uses may have precluded the inclusion of other, more suitable sites from analysis. For example, an exposition center alone requires approximately 31 acres of land, of which 26 acres would be devoted to the building footprint. This contemplates that all exhibition space is constructed on one level, a configuration preferred by the industry. (If necessary, the exhibition space can be divided on two levels, in which case the total site area required would be less, about 20 acres.) While parking for up to 3,000 cars must be accommodated, this parking can be constructed below-grade, thus no additional land area is required.) To the 31 acres for the exposition center must be added the land area for the football stadium. A football stadium requires a total of 20 acres (12 acres for the building footprint and an additional eight acres for circulation). A four-level parking

garage accommodating 15,000 cars requires another 26 acres. This parking must be built in a separate structure because it cannot be constructed beneath the stadium. Thus, the total site area required for a megaplex would be approximately 77 acres, an enormous amount of land area. If surface, rather than structured, parking were constructed, the total area required for parking alone would be over 100 acres.

While numerous factors have contributed to the conclusion that these uses should be built separately, the most compelling is that combining facilities for convention and trade shows with a football stadium virtually precludes all sites save South Bay, which in the opinion of the BRA is not the optimal location for convention and trade show use. Surrounded by highway, rail and industrial businesses, South Bay is extremely isolated. It is practically impossible to walk from the many visitor amenities in the downtown and Back Bay to the site because of the impenetrable barrier created by the interchange of the Southeast Expressway, the Massachusetts Turnpike and the Third Harbor Tunnel. Moreover, there is little room for nearby development of hotels, retail shops, restaurants and other support facilities, an important consideration to convention and trade show organizers.

Parking and Traffic

Proponents of a megaplex have argued that, by combining these facilities, parking could be shared among the users of the exposition center and the football stadium. The patrons of these facilities, however, exhibit very different patterns in terms of automobile use. Attendees of trade shows or large conventions in general come from outside the region, usually by air, and typically require only a modest level of parking, estimated at about 3,000 spaces for a facility with 600,000 square feet of exhibition space, or the equivalent of one and one-half Government Center parking garages.

Football patrons, on the other hand, are for the most part local and regional residents who use either private automobiles or public transportation to get to a stadium. For a 70,000-seat stadium, a minimum of 10,000 parking spaces would be required if the stadium were located next to a high capacity rapid transit system or at least 15,000 parking spaces otherwise.

This volume, if accommodated by surface parking, would require between 68 and 103 acres of land. Land on the outskirts of Boston's downtown, however, is far too valuable to dedicate this much space to surface parking. Assuming then that surface parking is unrealistic, structured parking garages would have to built -- the equivalent of five to seven Government Center parking garages. (Some existing parking garages could augment on-site parking, but

these would have to be no more than a one-mile walk from the site.) These parking spaces would only be filled during the 11 home football games in the fall and for an occasional concert or other infrequently scheduled, large public event. The remainder of the time, this parking -- being too close to downtown for a park and ride facility -- would sit largely empty because there would be no other demand for it. Commuters will not drive all the way to the periphery of downtown, park, and transfer to a shuttle van from a site that is only a few additional minutes from the central core. Given the high cost to build such parking (approximately $15,000 per space or $225 million for 15,000 cars), and its limited use, it is unlikely that this quantity of structured parking could be financed and built.

The large volume of automobile traffic associated with a football stadium results in a post-game exodus of 10,000 to 15,000 cars that would place a substantial burden on area roadways. The site must therefore be directly adjacent to a major arterial, which precludes every site in Boston save the South Bay, which the BRA feels is ill-suited for an exposition center.

Facility Marketing and Scheduling

A combined facility anticipates the occasional use of the covered playing field of the domed football stadium portion for convention or trade show activities. Many industry representatives we have surveyed strongly believe that such space is, for the most part, ill-suited to their requirements. A stadium with 70,000 fixed seats is an immense, cavernous space that does not readily lend itself to smaller scaled exhibition viewing and in general would be usable for only a limited number of large gatherings, such as a national political convention.

Combining the two facilities would likely result in a number of serious, possibly insurmountable, scheduling conflicts. Boston's prime season for conventions and trade shows occurs in the fall during the height of the football season. Thus, at the very time that the additional exhibition space in the stadium portion would be most in demand, that space would not be available. The duration of the average trade show reservation is nine days, with set-up and take-down time occupying approximately six of these days. Thus, any one trade show would require at least one weekend period and possibly two.

Because attendance at trade shows and conventions is much lower during winter, spring and summer, the argument that the football stadium could pay for itself if it could be used as exposition space for the three seasons of the year when football is not played is flawed. Even if a trade show did not require additional exposition space in the stadium portion of the complex, a show's organizers may still choose not to book the exposition center at the same time

that a football game is scheduled. The simultaneous demand placed on the facility's infrastructure would stretch its capacity beyond realistic limits. In the handful of facilities where football and exposition space are combined, convention and trade shows are generally not held at the same time as athletic events, in part due to conflicts with parking and other facility amenities.

Moreover, the advance time required for scheduling trade shows and conventions differs dramatically from that of the football calendar. While reservations for conventions and trade shows are generally made at least two years in advance of an event, in football, game dates and locations are set seven months before the start of the season. Furthermore, certain aspects of the schedule, such as play-offs, depend in part on the outcomes of competitions from recently completed contests at the end of the season.

Thus, the need for both certainty and advance booking in the trade show and convention industry conflicts with the uncertainty and less advanced reservations typical of the football schedule. Trade show organizers would, therefore, be less inclined to book a show in Boston during the fall when the potential for scheduling conflicts with football would be most likely.

Urban Scale and Design

Accommodating a combined facility for expositions and football requires the construction of an extremely large and windowless building with approximately 60 loading docks that would be vacant for numerous periods throughout the year, thus presenting significant urban design and architectural issues. To demonstrate the magnitude of this development, the footprint of an exposition center with 600,000 square feet of exhibition space would cover about 31 acres, just slightly more than the 27-acre Prudential Center development between Exeter and Dalton Streets (see size comparison diagram on page 12).

Boston is widely known for its well-designed, fine-grained urban scale, a scale compatible with a historic walking city. Even Boston's current large structures and complexes, such as the Prudential Center, the Hynes Convention Center and the Central Artery, have been or are being redesigned with a renewed emphasis on the importance of street frontage, carefully defined spaces, the relationship to the pedestrian of an active and transparent ground level, and the importance of human scale. While it is clear that even separately an exposition center and football stadium would each be massive, a more sensitive and appropriate urban scale can be achieved if they are split into two structures and constructed in separate locations.

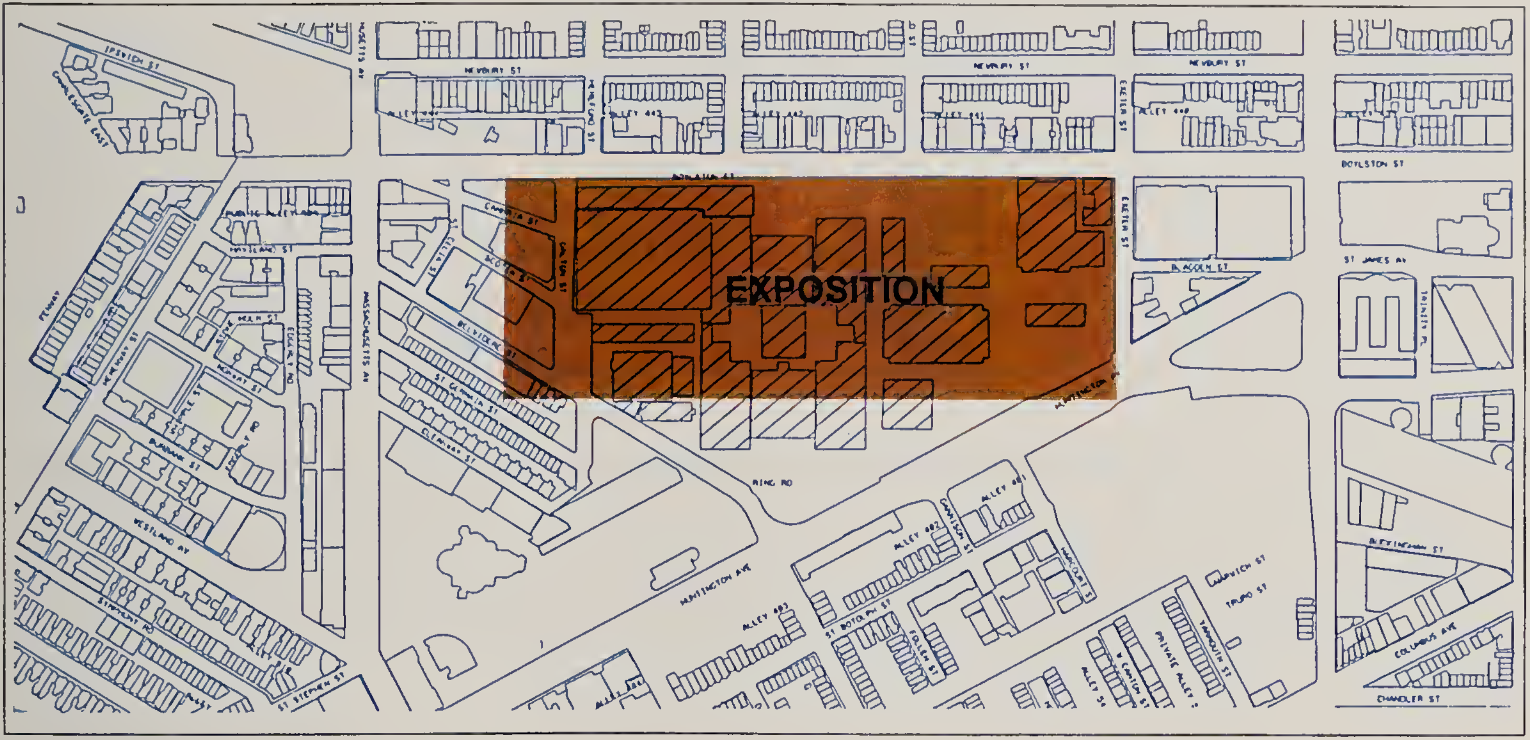
Costs

The use of the stadium for trade shows or meetings would require that the football stadium be constructed with a cover or dome, a feature that almost doubles development cost, according to the Coopers & Lybrand study. The high premium associated with a domed stadium must be weighed against the infrequency of its being used for trade shows or large meetings. The BRA has seriously examined the conventional presumption that the stadium portion of a combined facility would get significant use for large meetings or for additional exhibition space. Given the substantial investment involved in constructing a stadium, the BRA believes that, if additional exhibition or meeting space is required, it is far more prudent to construct space dedicated to such purposes rather than constructing a stadium that is occasionally adapted for such uses.

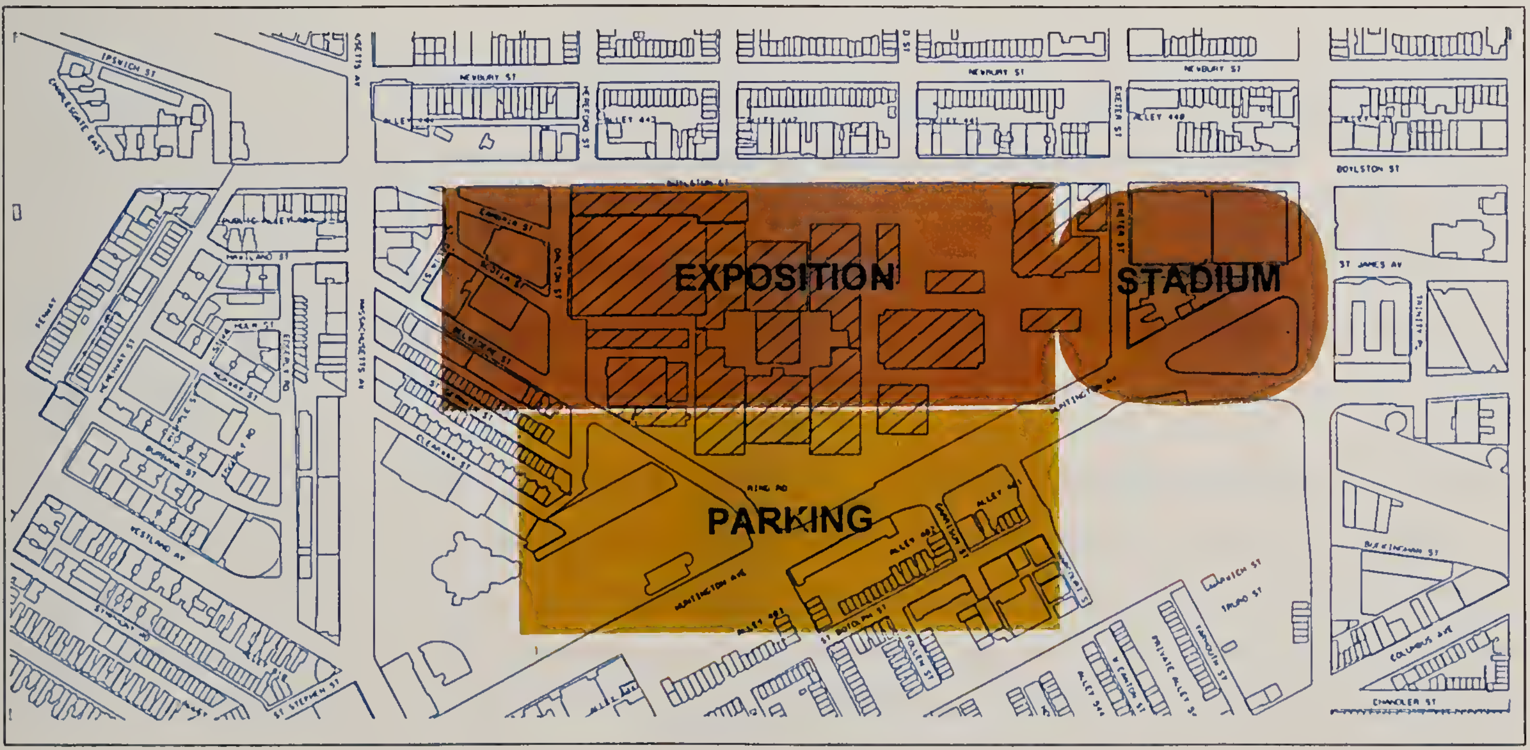
Let us examine the scenario that an extremely large meeting event, such as a national political convention, were to be scheduled at a new Boston megaplex. First, such large meetings are quite infrequent. National political conventions, for example, occur only once every four years. Second, such an event would attract an extremely large number of people (approximately 20,000) all coming into the region at once. The sharp occasional demand on hotel space would be extremely difficult for Boston-area hotels to absorb. There are only 35,000 hotel rooms in the entire Boston metropolitan area; in Boston proper only about 12,000 rooms. Over half of the region's hotel rooms would be filled during these large, one-time events, leaving few rooms for tourists or business people. Boston's hotel capacity is relatively small compared with with other major metropolitan areas: Los Angeles -- 86,000 hotel rooms, Orlando -- 78,000, Las Vegas --- 73,000, Washington D.C.-- 70,000, Chicago -- 66,000, New York City -- 65,000, San Francisco -- 60,000, Atlanta -- 55,000.

It would take years for Boston to develop the hotel capacity to serve the numbers of visitors that would come to a large convocation. Keeping all of these rooms filled between these infrequent large gatherings would be difficult, thus calling into question the feasibility of their construction.

SIZE COMPARISONS



EXPOSITION CENTER
The total site area required for an exposition center alone totals 31 acres, of which the footprint would occupy 26 acres, an area comparable to the Prudential Center development which extends from Exeter Street to Dalton Street and from Boylston Street to Huntington Avenue. Parking for 3,000 cars would be needed, but can be accommodated below-grade, beneath the structure of the exposition center, thus requiring no additional land area.



EXPOSITION CENTER, FOOTBALL STADIUM AND PARKING
The total site area required for the exposition center, football stadium and parking is 77 acres, of which the building footprints occupy 64 acres. (It is interesting to note that the four-level parking garage required to accommodate the 15,000 spaces needed to service the stadium would by itself have a footprint of 26 acres, comparable to the Prudential Center.)

With a new exposition center, however, Boston could still host generously-sized meetings. Current exposition centers are designed in such a way that up to 10,000 fixed seats can be folded into the structure of a ballroom and dismounted as needed. If more than 10,000 fixed seats are needed, the event could be hosted at the new Shawmut Center, which has the capacity to accommodate up to some 19,000 people. Boston could still capture a large segment of the market for meetings and for expositions requiring large space between the Shawmut Center and a new exposition center. Indeed, the majority of meetings and conventions are not the one-time enormous convocations, but are more typically in a much smaller size range.

Separating the two facilities means that an open-air stadium could be considered, perhaps making the facility more attractive for other sporting events such as the Olympics, which requires a stadium without a roof for track and field events. Olympic use also requires a stadium with a footprint approximately one-third larger than the footprint of the standard football stadium.

Economic Benefits

While the question of whether and to what degree public financing should be used for the construction of either or both of these facilities is a matter for the State Legislature, it is germane to such a discussion to examine these projects separately because the economics of each use vary considerably.

As an initial matter, the two facilities are quite different in terms of their usage. The typical football schedule contains only 11 home games. While other types of events may be scheduled at the football stadium, such as large rock concerts, tractor pulls or the Final Four, these types of events are irregular and thus do not produce a predictable income stream. In general, bond underwriters would not consider the revenue from such events because of their sporadic nature.

Second, spending by exposition center attendees is substantially greater than that of football or other sports patrons. As a consequence, the overall economic benefits associated with an exposition center would be much more significant than those associated with a football stadium. The typical convention-goer stays for a period of three or four days and spends up to $1,000 or more on hotels, meals, entertainment and transportation. The typical football fan, on the other hand, lives in the region (with the exception of an infrequent national event such as the Super Bowl) and tends to leave the stadium area immediately after the game. As a consequence, sports patrons make considerably smaller expenditures on such items as food and souvenirs, and virtually no expenditures for overnight accommodations. Moreover, spending by

convention-goers is money brought into the region from outside, thus constituting net new economic activity, while spending by sports fans is generally redirected from other local recreation expenditures. In terms of economic benefit, the exposition center produces more overall spending, brings in money from outside the region, and produces greater tax revenues.

CHAPTER 2

Determining The Maximum Size Of The Exposition Center

Key Conclusions

Given current and projected demand, a facility with up to 600,000 square feet of exhibition space would allow Boston to host the major share of large trade shows and conventions that the City currently cannot accommodate. (This translates into a structure of approximately 1.2 million total square feet.)

A. MARKET ANALYSIS

While a comprehensive market analysis is beyond the scope of this study, a discussion of key market issues yields useful findings about Boston's potential niche in the national market for exposition space that are essential to responsible facility planning and siting. A market analysis helps to determine the maximum size of a new exposition center (including future expansion potential), a necessary prerequisite to an evaluation of all potential sites in the City. This market analysis evaluates all trade shows and other meetings, including conventions, that require significant exhibition space (*i.e.*, over 100,000 square feet). Those meetings that do not require significant exhibition space can generally be accommodated in existing facilities at the present time.

Is Boston Losing Shows?

The BRA believes that Boston's existing supply of exposition space is no longer sufficient to meet the growing demand. The Hynes Convention Center has one of the highest occupancy rates of any convention center in the country, but is just beginning to lose shows either because it cannot accommodate a show's size requirements or its requested dates.

Boston today cannot compete for large national rotating trade shows given that the Hynes Convention Center has only 193,000 square feet of exhibition space, of which only 111,000 square feet are contiguous. In fact, a significant number of trade shows currently using the Hynes require the entire building. Price Waterhouse, in its Phase I study, concluded "...it is

reasonable to assume that Boston loses many shows which require more than 111,000 contiguous square feet of space." In fact, 22.5 percent of all rotating, non-rotating consumer and trade shows cannot consider Boston because these shows require 200,000 square feet or more of exhibition space.

The BRA believes that there is a market for events that require large and contiguous space for exhibiting products or services that cannot currently be served and that Boston, given its attractiveness as a destination for tourism in general and for such events in particular, would be able to capture a portion of this market. Price Waterhouse noted that Boston has many characteristics that make it a highly desirable destination for the trade show and convention industry. (See Price Waterhouse, Phase I, p. 29.)

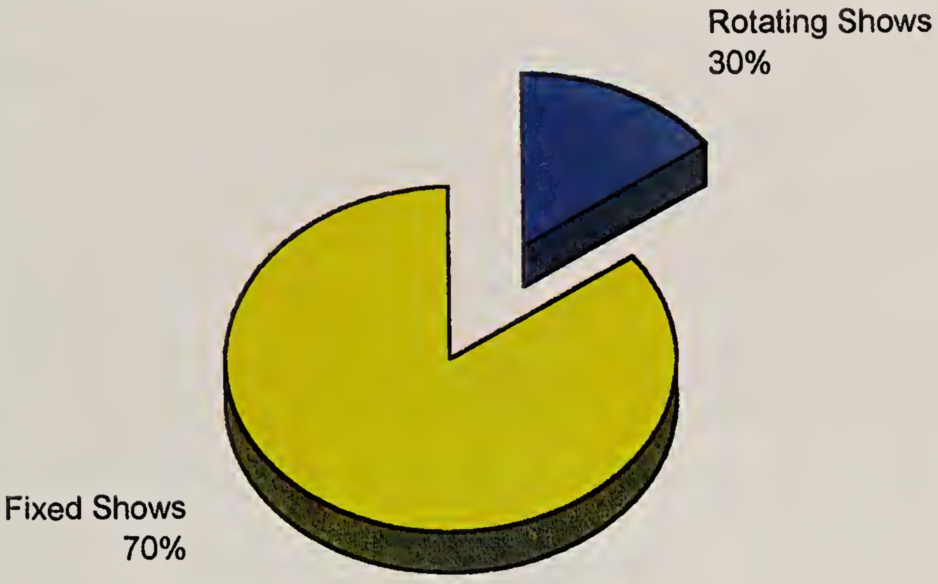
> **Population and Income.** Boston's Metropolitan Statistical Area population is the seventh largest in the nation, a key site selection criteria. Furthermore, Boston ranks sixth in the U.S. for the number of households with effective buying income of $50,000 and above.
>
> **Office Space.** Boston's large downtown supply of occupied Class A office space is an advantage because a strong office market is critical to developing and maintaining a large supply of hotel rooms.
>
> **Ambiance.** Boston, with its many restaurants, shops, and cultural and historic sites, is very attractive to out-of-town delegates.

Market Objectives

Having concluded that there is a segment of the market for which Boston currently cannot compete, the nature of this market must be determined as well as the size facility that would best serve this market. This analysis is driven by the following market objectives:

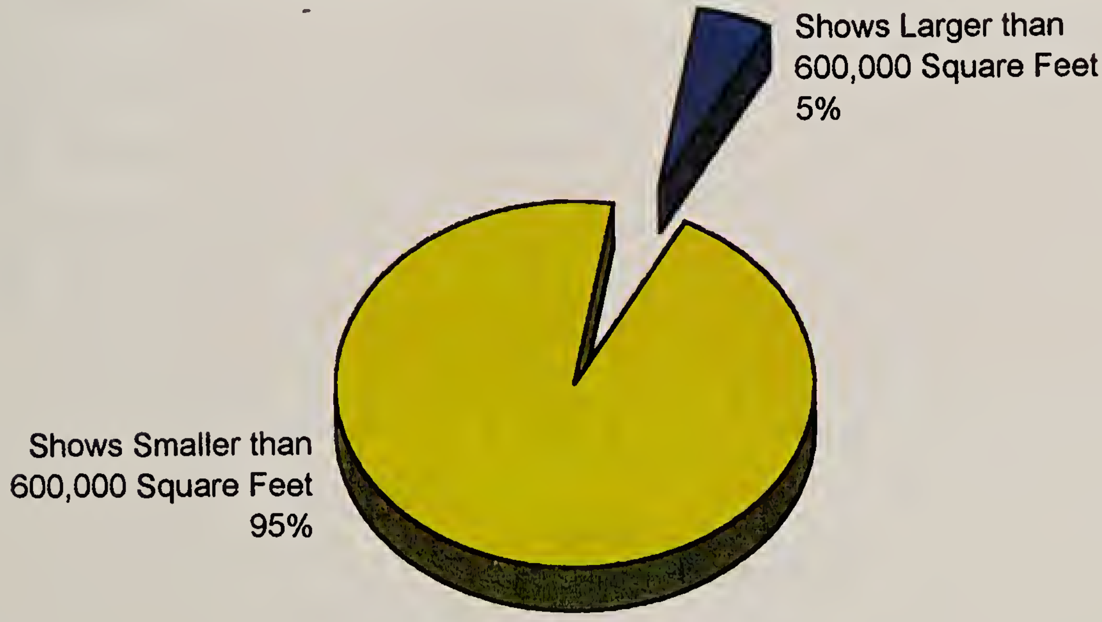
> Attract new rotating trade shows that would like to come to Boston but cannot because of facility size or unavailable engagement dates;
>
> Attract new permanent trade shows that have a home elsewhere but may be outgrowing facilities there;
>
> Create a venue for the development of new permanent trade shows that would remain fixed in Boston, shows tied perhaps to prominent local industries such as health care, publishing or computer software, and
>
> Keep in Boston both rotating and permanent trade shows that are already here, but are quickly outgrowing existing facilities.

FIGURE 1 RATIO OF ROTATING TO PERMANENT TRADESHOWS



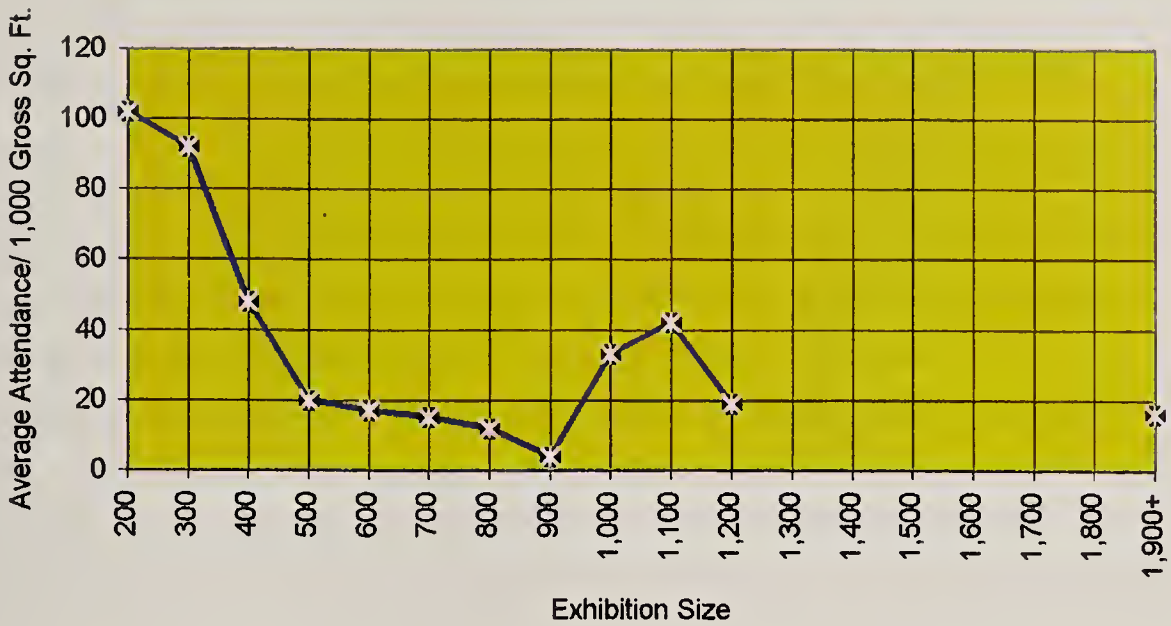
Only 30 percent of the trade show market rotates among cities from year to year.

FIGURE 2 SIZE DISTRIBUTION OF EXPOSITIONS



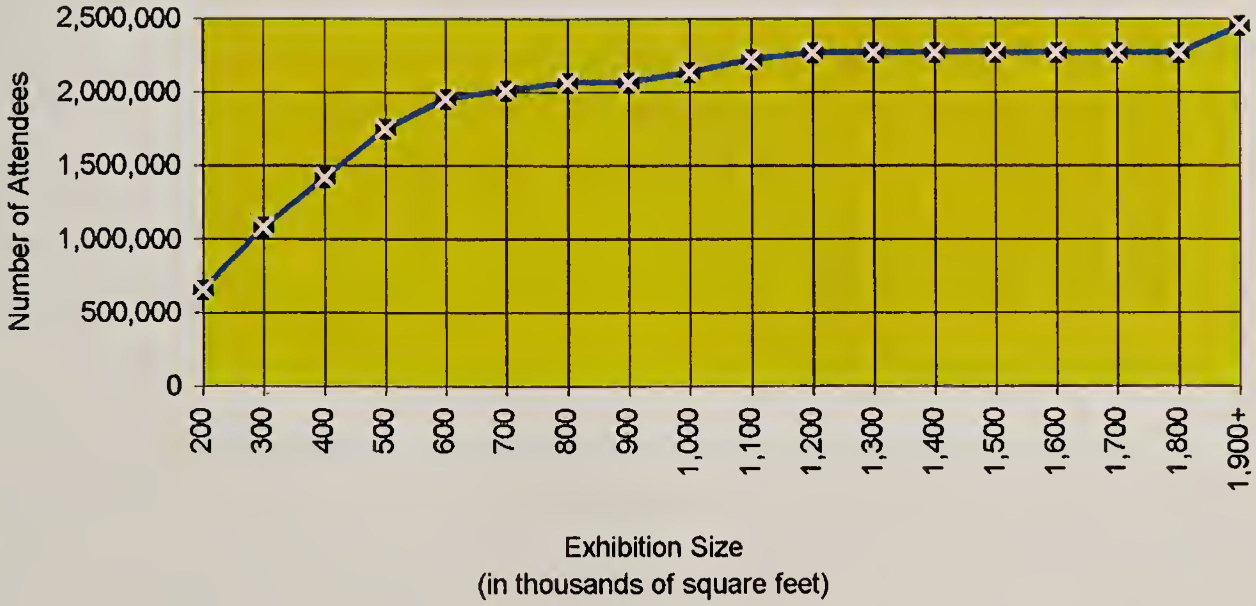
Only five percent of shows are larger than 600,000 square feet.

FIGURE 3 ATTENDANCE DENSITY



An increasingly larger facility yields diminishing returns in the number of attendees.

FIGURE 4 NATIONAL ATTENDANCE AT ROTATING SHOWS



After the 600,000 square foot level, attendance flattens out dramatically for nationally rotating shows.

Market Segmentation

In exploring the demand market for new or expanded exposition facilities in Boston, a few of the key terms defined earlier in this report must be recalled. The most important distinction to make is between consumer shows on the one hand and trade shows on the other.

Consumer shows. Consumer shows tends to be local, that is, they draw attendees from the local metropolitan population, not from out-of-town. Consumer shows represent one option among many for local residents to examine goods or services. Attendees generally visit a consumer show for a portion of one day before returning home. While attendance may be large at these events, most attendees spend little money that would not have been spent locally on other activities. In general, because consumer shows do not bring new dollars into the region, they constitute a very different market segment when compared with trade shows in terms of economic and fiscal impacts. This market analysis does not focus on consumer shows.

Trade shows. Trade shows highlight entire industries and have a national and sometimes even an international audience. Trade shows are attended primarily by business and professional groups comprised largely of out-of-town visitors. These visitors bring spending power into the city and state, and create business for local hotels, restaurants, retail stores and other visitor services during a stay that averages three to four days. Because national and international trade shows have a much greater economic and fiscal impact in terms of new business, jobs, earnings and tax revenues than do local consumer shows, this analysis focuses only on this segment of the exposition market. It should be remembered that conventions today make use more and more of exhibits and thus require more space than just for seating or conferences. For this market analysis, we consider the use of the term trade shows to include trade shows and other large meetings that require significant exhibition space *(i.e.*, over 100,000 square feet).

Fixed vs. Rotating Trade Shows. The market for national trade shows is further segmented into those that remain in the same city or region year after year (fixed shows) and those that change venue year after year (rotating shows). Trade shows that remain in the same place typically do so because the highlighted industry has strong ties to that city or region. Only about 30 percent of all trade shows change venue each time the show is held. (See figure 1.) It becomes extremely important, therefore, to examine the characteristics of this 30 percent in greater detail. This information suggests that it is these rotating trade shows that constitute the most certain and immediate market for a new exposition center. Thus, this market analy-

sis focuses primarily on national rotating trade shows. Fixed shows will be discussed in greater detail in Chapter 5.

Market Demand

As a first step in this analysis, all national shows were evaluated by size. Only *five percent* of all shows (trade shows and consumer shows) require an exhibition space larger than 600,000 gross square feet. (See figure 2.)

With respect to trade shows, as these shows become larger, the number of people attending does not increase proportionally. (See figure 3.) While the total aggregate attendance at rotating trade shows increase with each successive increase in size category, attendance flattens out dramatically beyond the 600,000 square foot level. (See figure 4.) Indeed, after this level, very few additional delegates are added. This is because there are very few shows larger than 600,000 square feet, and moreover, many of the larger trade shows need more floor space for exhibits -- not more space for people. This is significant because it is the number of people attending -- not the amount of floor space devoted to the show -- that generates economic benefits for the region. A larger facility yields a diminishing return in terms of the number of attendees that come into the region.

> *This finding argues strongly against the assumption that, above a certain size, if you build a larger facility, attendance will increase proportionately.*

The BRA believes that a new Boston exposition facility should position itself to compete for national trade shows of 600,000 square feet or less, not all trade shows. The BRA recommends, therefore, that the amount of new exhibition space that should be constructed in Boston not exceed 600,000 square feet, which translates into a building of no more than 1.2 million square feet. There may very well be additional demand that cannot be predicted. The site, therefore, should have enough capacity to accommodate future expansion.

As of 1992, Boston ranks 42nd. in the country in size of publicly financed exhibition facilities. With a new 600,000 square feet exposition center, our ranking will climb to eleventh.

Twenty two percent of all shows cannot consider Boston because they either do not rotate to other cities or require exhibit space in excess of 200,000 square feet. For example, the National Truck Equipment Supershow requires 200,000 square feet of space and cannot come to the Hynes Convention Center now because it is too small. It would, however, be able to come to the new facility.

After the new exposition center is constructed, only five percent of all shows will be precluded from this venue, either because they are still too big, or do not rotate to other cities. For example, the California Farm Equipment Show is both too big and regionally oriented and thus would not consider Boston.

Finally, the following is a brief sampling of recently constructed or expanded facilities.

City	***Sq,Ft.***	***Year***
New Charlotte Conventetion Center	412,000	1994
Pennsylvania Convention Center, Philadelphia	435,000	1993
Attlantic City Convention Center	486,000	1995
Rosemont Convention Center, Chicago	450,000 to 600,000	1992 *(expansion)*
Anaheim Convention Center	575,000 to 720,000	1993 *(expansion)*

B. HOTEL SUPPLY

Having determined a maximum size of the exposition center from the point of view of the market, the issue of hotel supply must now be examined. A critical and intimate relationship exists between the size and success of the exposition center and the number of hotel rooms available for exposition center attendees.

Boston's downtown and Back Bay hotels enjoy one of the highest occupancy rates in the country and, as a consequence, also command some of the steepest room rates. In fact, given Boston's current supply and occupancy rate, the BRA estimates that there is a pent-up demand for hotel space even without the construction of an exposition center.

While some have argued for building an exposition center with an extremely large exhibition capacity (850,000 square feet or more), without an adequate hotel supply within a reasonable distance, trade show organizers will not book the facility even if it is attractive, efficient and sufficiently large. Both room availability and price are critical factors in the eyes of trade show organizers in choosing cities in which to host events. In general, such organizers look for moderately priced, not luxury, hotels.

According to the BRA's studies, a facility with up to 600,000 square feet of exhibition space will have an occupancy rate of 26 percent when it opens in the year 2000. This level of occupancy arises primarily from rotating trade shows whose organizers began to schedule events

at the new Boston exposition center starting with the announcement of project approval and through the construction period. This level of occupancy can be expected to generate a demand for as many as 1,646 new hotel rooms.

With respect to permanent shows, the BRA believes there is a longer phase-in time as organizers factor in the new Boston location and transfer some permanent shows from other locations to this facility. Permanent shows entail a greater level of commitment to a location and cannot be transferred as easily as rotating shows and therefore occupancy from these shows will develop over a longer period of time. Thus, occupancy at the exposition center is expected to rise every year, starting in 2000, reaching stabilization (52 percent occupancy) 10 years later in 2010. By 2010, it is estimated that there will be demand for a total of 3,259 hotel rooms.

The natural phase-in period, together with a cooperative and diligent planning effort, should give the hotel industry ample opportunity to add to room supply incrementally in such a way that a healthy occupancy rate and broad price ranges are maintained. In this manner, neither tourists nor trade show attendees will be deterred from visiting Boston for lack of hotel rooms or because of an inordinate concentration of hotels in higher price ranges. It should be remembered that the demand for new hotel rooms will not be absorbed by Boston alone and there will be significant spill-over beyond Boston's city limits, providing economic benefits to other municipalities and, of course, the Commonwealth as a whole.

It should also be noted that while trade shows stimulate additional hotel demand, shows tend to be unevenly distributed -- peaking concurrently with Boston's main tourist season in the fall. Thus, the demand for hotel rooms is very high during this period. It is important, therefore, that new hotels be located where they can serve other visitor markets, making them better able to absorb the demand slumps and surges generated by the normal ebb and flow of the exposition center business. Hotels must be sited properly to ensure their success, that is, they should have access to a healthy and steady secondary market, such as the airport or the downtown, in addition to the exposition center. As will be discussed in Chapter 4, the siting of hotels is a consideration in siting the exposition center. For example, the exposition site should be close to the airport and the downtown to provide the hotels with a good secondary market.

CHAPTER 3

SITE IDENTIFICATION AND INITIAL SCREENING PROCESS

Key Conclusion:

Of the 12 sites identified and studied as part of an initial screening process for possible exposition center development, five met certain minimum criteria to warrant more in-depth analyses: Back Bay, C Street, Massachusetts Avenue, Northern Avenue and South Bay.

Of the 12 sites identified and studied as part of an initial screening process for possible football stadium development, two met certain minimum criteria to warrant more in-depth analyses: Massachusetts Avenue and South Bay.

The site selection process was conducted in two phases, an initial screening process and a final screening process. The initial screening was a broad-brushed evaluation, the objective of which was primarily the elimination of sites that did not meet certain, very basic requirements, such as sufficient size or reasonable road and transit access. (See chart entitled,Initial Screening.)

The list of locations was assembled by looking at all large sites in the City of Boston, as well as any site that had been discussed or proposed by others. This inventory totaled 12 locations. During the initial screening, each of these 12 sites was subjected to an appraisal based on the criteria of access, location *(i.e.*, proximate to or remote from other visitor destinations), and site capacity and availability. In this manner, sites that were too small, had little or no vehicular or transit access, or were poorly situated were eliminated. All 12 sites were also subjected to a similar analysis for their suitability as possible stadium locations.

For each criterion, a site was given either a pass or fail mark. Those sites with one or more fail marks were not considered for further study. During this first screening, all but five sites were eliminated for further study as possible exposition center locations. For the sports stadium analysis, all but two sites were eliminated.

During the final screening, the selected sites were studied on the basis of essentially these same criteria, but in much greater detail, as well as several additional criteria. The final screening is presented in Chapter 4.

A. SITE IDENTIFICATION AND INITIAL SCREENING PROCESS FOR THE EXPOSITION CENTER

In siting an exposition center, there is a trade-off between building a center in close proximity to existing visitor amenities and the need for a large, efficient and easily accessible facility. On balance, the BRA believes that the distinct functional advantages of developing a facility with the appropriate size, layout and access outweigh any disadvantage of locating the exposition center on the periphery of the central core. This balance is, of course, dependent upon having easy vehicular and pedestrian access, and available development opportunities on adjacent land for the timely construction of ancillary support facilities, such as hotels, retail shops and restaurants.

1. Site

To accommodate an exposition center with up to 600,000 square feet of exhibition space, a site should contain 31 contiguous acres. All exhibition space should be on one level -- the optimal arrangement -- with meeting rooms, banquet hall, kitchens and offices stacked on another level above, thus achieving an efficiency common to many recently constructed exposition centers.

Should conditions warrant, the exhibition space itself can be divided and stacked one floor on top of the other. In this case, the site area required would be less -- about 20 acres. Dividing the exhibition space is acceptable, provided both levels are similar in quality and in particular, have direct truck access. If the exhibition space is divided, one level should contain no less than 400,000 square feet of contiguous exhibition space. The site should also offer some possibility of expansion so that, should future market conditions warrant, additional exhibition space could easily be added.

To place in perspective the task of siting such a large development, it is interesting to note that if an exposition center with 600,000 square feet of exhibition space were constructed all on one level, it would fill virtually the entire site of the Prudential Center. (See Size Comparison Chart, Chapter 1.)

2. Access

To service conventions and trade shows, vehicular access to and from Logan International Airport is paramount, because most attendees come from outside the region. In addition, the site should have a nearby connection to major surface arterials to allow shuttle buses to transport attendees to and from their hotels, and to allow large semi-trailer trucks to deliver and retrieve exhibits. Approximately 3,000 parking spaces (required primarily to accommodate local consumer shows) within walking distance are sufficient to service auto demand. this level of parking is comparable to that of other recently constructed exposition centers of approximately 600,000 square feet. In addition, Boston's reputation as a walking city, together with its elaborate public transit network, suggests that attendees of national trade shows in Boston may opt for public transportation rather than renting cars. Access to public transportation, therefore, is essential. The MBTA Green Line or other light-rail service would be adequate since demand is evenly distributed over a number of hours of the day.

3. Location

This initial screening judged whether or not a site was too remote from existing visitor amenities to warrant further study. Three of the 12 sites were eliminated on this basis.

B. SITE IDENTIFICATION AND INITIAL SCREENING PROCESS FOR THE FOOTBALL STADIUM

Certain fundamental differences exist between siting an exposition center and siting a football stadium. A sports stadium requires *seven times* more parking capacity and substantially more highway volume than an exposition center. Traffic demands tend to be highly uneven, with surges before and after games. Walking distance to high-capacity public transportation is a prerequisite to lessen further traffic congestion and the need for additional parking. Unlike an exposition center, a stadium may be located in an area where larger parcels of land, further removed from the central core, are available.

1. Site

For a football stadium, a potential site must contain at least 20 acres, of which 12 acres are for the building footprint. (Additional area is necessary to accommodate the gathering and circulation of large crowds.) This acreage includes parking for 5,000 spaces directly adjacent to the stadium that are normally designated for luxury box holders. The pre-sale of luxury boxes is often a crucial element of project financing. As a consequence of high automobile use by football patrons, ample parking is needed for the general public. Because surface parking is

surface parking is unrealistic, requiring an enormous amount of land area, structured parking would have to have to built. To accommodate up to 15,000 cars for general parking, an additional 26 acres would be needed for a four-level parking garage. Were an exposition center added to this (another 31 acres) the total site required would be approximately 77 acres (see the Size Comparison Chart, Chapter 1).

Unlike an exposition center, a stadium would not have to be close to downtown or other visitor amenities. In fact, in certain respects, locations outside of the central core are preferable.

2. Access

Football and other sporting events, in large part, attract patrons from the local region, 30 percent of whom will use public transportation and 70 percent private automobile (with an average of three persons per car). These figures are based on the national average and vary little from region to region. These patterns are unlikely to change in the near future, automobile dependency being deeply ingrained and not easily modified. The site must, therefore, have multiple arterial connections within one-half mile of a major highway in order to clear automobiles from the area at the end of a game quickly without clogging local streets.

To minimize impacts on roadways, high-capacity public transit (either MBTA Red Line or Orange Line) must be available nearby, preferably within a 12- to 15-minute walk. High-capacity is the operative word here. Unlike some patterns of transit use, sports patrons place an extremely high demand on transit at the beginning and end of sporting events, and very little at other times. Thus, the transit line must be capable of absorbing these high demand surges. The MBTA has indicated that either the Red or Orange Line can accommodate this need with some additional service before and after games.

INITIAL SCREENING

SITE	EXPOSITION				STADIUM		
	Site	Access	Location	Further Study?	Site	Access	Further Study?
Mass. Ave.	●	●	●	Y	●	●	Y
South Bay	●	●	●	Y	●	●	Y
C Street	●	●	●	Y	○ Too small	●	N
Northern Ave. (Massport)	●	●	●	Y	○ Too small	●	N
Back Bay (Hynes Expansion)	●	●	●	Y	○ Too small	○ Limited transit	N
Beacon Yards	○ Unavailable	●	●	N	○ Too small	○ Limited transit	N
Kenmore / Mass Pike	○ Too small	●	●	N	○ Too small	○ Limited transit	N
Boston Sand and Gravel	○ Too small	●	●	N	○ Too small	●	N
North Station	○ Too small	●	●	N	○ Too small	●	N
Boston State Hospital	●	○ Limited transit	○ Isolated	N	●	○ Limited transit	N
Suffolk Downs	●	○ Limited highway	○ Isolated	N	●	○ Limited highway	N
Neponset Drive-In	○ Unavailable	●	○ Isolated	N	○ Unavailable	○ Limited transit	N

SUMMARY OF INITIAL SCREENING CRITERIA

Site Analysis

1. Site should contain at least 31 contiguous acres with a minimum of 700 feet by 1800 feet for building foot print dimensions.
2. Displacement of existing uses should be kept to a minimum; site should be available within 5 years.

Access

1. Site should have required transportation infrastructure already in place, or funds committed for improvements.
2. Site should be adjacent to major highway and rapid transit service.

Location

1. Exposition site should be within walking distance to hotels, downtown shopping and other visitor attractions, as well as convenient to airport and other transportation nodes.

Evaluation

● Pass ○ Fail

CHAPTER 4

IN-DEPTH ANALYSIS AND FINAL SCREENING PROCESS

Key Conclusion:

With regard to an exposition center, the BRA recommends that the best location in the City is C Street, located in the Fort Point Channel District, with Northern Avenue, also in this District, as a possible alternate. Both warrant further study.

With regard to a football stadium, preliminary traffic analyses indicate that the only site within the City that is adjacent to high-capacity rail, has adjacent arterial roadway access and that is large enough to accommodate a football stadium is the South Bay site. A comprehensive traffic analysis must, however, be done to determine whether additional infrastructure is required, and at what cost, to effectively accommodate the the post-game traffic volumes.

The final screening consisted of a far more detailed and in-depth analysis of the sites that were deemed to warrant further study. This analysis is presented on the series of charts that follow. For each criterion a judgment was made that either (i) advantages outweighed disadvantages (ii) advantages balanced disadvantages, or (iii) disadvantages outweighed advantages. It is important to note that these categories are not all weighted equally. Thus, the reader should not add up all of the marks to arrive at a total. The ratings are intended as guides to each site's viability. The following highlights some of the key criteria used in the final screening. Refer to the Key Chart for additional information.

A. IN-DEPTH ANALYSIS AND FINAL SCREENING PROCESS FOR THE EXPOSITION CENTER

1. Site

While the initial screening took into account the total acreage required, the final screening also evaluated whether minimum dimensions of 1,800 feet by 700 feet for the building footprint could be accommodated. Ideally, the site should contain a high percentage of vacant or

Site Acquisition Comparison

	Back Bay (Hynes Expansion)	C Street	Mass. Ave.	Northern Ave. (Massport)	South Bay
Parcel Size (Acres)	3.7	27.4	67.8	30.9	47.2
Public Ownership	30.7%	2.3%	11.5%	80.0%	68.7%
Jobs Lost	25	284	2,300	852	750
Total Assessed Value	$8.53 Million	$10.4 Million	$30.9 Million	$20.16 Million	$22.2 Million
Average Assessed Value ($ per sq. ft.)	$138.95	$7.19	$10.88	$14.22	$26.89
Taxes Lost (FY94)	$326,723	$436,770	1,131,602	$184,102	$777,678
No. of Parcels	4	11	78	15	5
No. of Owners	4	14	198	27	12

under-utilized land in order to minimize disruption and keep relocation costs low. The use of the site should result in displacing as few businesses, jobs and homes as possible. Existing uses must be able to be relocated so that the site can be made available for new construction in the next five years.

Minimum cost of acquisition was a key consideration. Sites with excessive infrastructure or site preparation costs were avoided. Examples of these costs include abnormally high investments for foundations, utilities, roadways and transit lines, air-rights development, environmental clean-up or demolition. Also considered were such factors as ease of assembly, the number of separate owners involved, the assessed value of the land and buildings, and current city tax revenues that would be lost by use of the site. In addition, unique attributes of a site in terms of either a current use or future potential (for example, a waterfront site with the potential to serve the maritime economy) must be considered.

2. Access

Transit Access. For an exposition center, the site should have good access to transit (within an approximately 10-15 minute walk to a transit station) because trade show attendees tend to use public transportation, particularly if their stay stretches over many days. Transit does not necessarily have to be high capacity. The MBTA Green Line, for example, is adequate.

Pedestrian Access. Walking distances to visitor attractions and major destination points should be reasonable and along routes that have an active pedestrian environment or have good future potential for such an environment .

Vehicular Access. Good vehicular connections from Logan International Airport and to area hotels is important. However, an exposition center does not experience peak traffic surges in the same manner as a football stadium. Therefore, multiple arterial access is not required.

Parking Availability. An exposition center requires about 3,000 parking spaces, primarily for local consumer shows, not trade shows or conventions. An optimal location offers parking capacity in the surrounding area as well as the capacity to develop parking on-site.

3. Facility Marketability

The marketability of an exposition center to the trade show and convention industry is comprised of several factors related to the facility's physical characteristics, as well as the nature of the city environment around it.

Proximity to Visitor Destinations. Proximity to an array of visitor destinations is highly desirable to convention and trade show attendees and thus to organizers responsible for choosing cities and facilities. The convenience of walking to hotels, restaurants, shops and cultural attractions adds substantial value to the exposition center and encourages more visitor spending in the local economy. Although proximity would argue for either a downtown or a Back Bay location, virtually no sites in either area are large enough to accommodate 600,000 square feet of exhibition space that can be laid out efficiently and be adequately serviced by a sufficient number of loading docks.

Efficient Facility Design. Large, continuous exhibition floors are expected by the trade show industry and any site must be able to accommodate this key feature. Exhibit floors must have direct access to roadways (usually via ramps) so that semi-trailer trucks can drive directly onto the floor, in order to minimize move-in and move-out time. Adjacent, off-street parking areas for trucks waiting to off-load must also be provided to avoid congestion on local streets. For a facility with 600,000 square feet of exhibition space, approximately 60 loading docks are needed for quick and simultaneous loading and unloading. For meetings, the exposition center should be able to accommodate at least 10,000 people. A limited number of sites exist adjacent to the downtown that could yield the desired facility quality and provide for an efficient layout and sound design characteristics.

Synergy with the Hotel Market. As discussed in Chapter 2, the site should also complement and add value to the hotels that are likely to be developed in response to increased demand from additional attendees. For example, in some cities hotels that serve the convention or trade show industry often experience solid occupancy when show attendance is high, but little business otherwise. It is important, therefore, that new hotels be located where they can serve other visitor markets, making them better able to absorb the demand slumps and surges generated by the normal ebb and flow of the exposition center business. The site of the exposition center should foster a synergy with other locations of high visitor activity, such as Logan International Airport, the downtown, the Back Bay and the waterfront, so that additional development potential and value will be created.

4. Neighborhood Impacts

Every effort must be made to assure that the facility will have minimal adverse impacts, such as traffic and noise, on adjacent communities. The facility should be a reasonable distance from residential neighborhoods and be adequately buffered. The facility should not displace important existing or possible future uses that are desired by the neighborhood, and should ideally be a stimulus for compatible new growth and development. Furthermore, the facility should offer some benefit to the neighborhoods in the immediate vicinity, providing the potential for civic or community use.

B. IN-DEPTH ANALYSIS AND FINAL SCREENING PROCESS FOR THE FOOTBALL STADIUM

1. Site

In addition to basic considerations of size and highway access examined in the initial screening, the final screening also took into account such factors as the ease of assembly, the number of separate owners, the minimum displacement of business, jobs and homes, the assessed value of the land and buildings, and city tax revenues that would be lost by use of the site. While the total area needed (20 acres) was considered in the initial screening, the final screening also evaluated whether a site's configuration would allow for a stadium footprint with minimum dimensions of 800 feet by 700 feet.

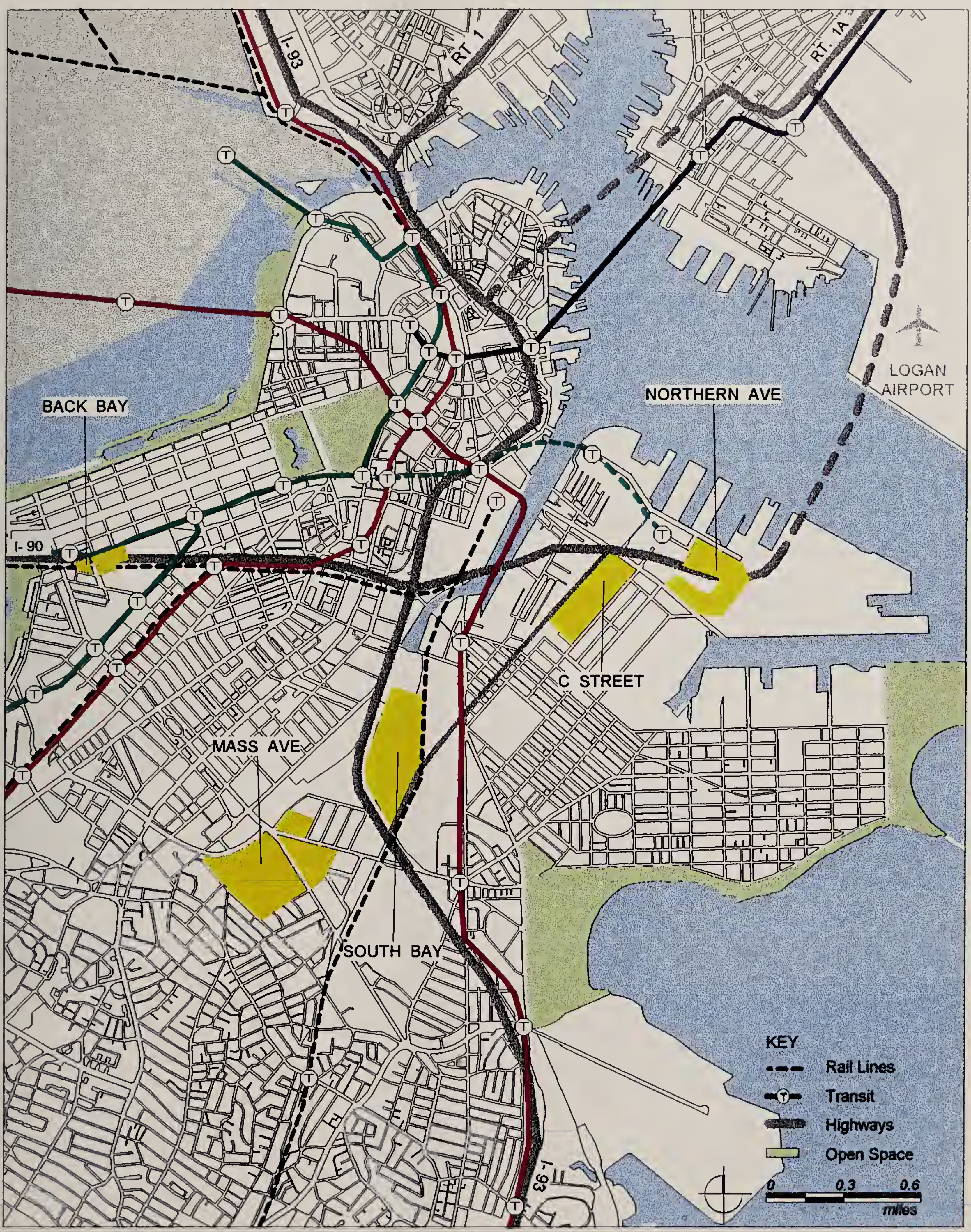
2. Access

In addition to the vehicular and transit access requirements examined in the initial screening, the final screening took into account such factors as impact on and compatibility with existing and proposed road systems, possible traffic problem areas, and crucial road improvements required. Requirements for stadium use included the presence of an interstate highway within one-half mile, multiple arterial connections to highways, compatibility with planned road improvements, and minimal additional road infrastructure costs. Moreover, consideration was given to the fact that substantial areas of the City are subject to parking freeze regulations that restrict the amount of new parking capacity that can be developed.

3. Facility Marketability

With respect to the marketability of the football stadium, key considerations include seating capacity (70,000 seats and 150 luxury boxes), easy vehicular and transit access, and sufficient parking.

FINAL SCREENING



KEY CHART

	SITE		ACCESS				FACILITY MARKETABILITY	NEIGHBORHOOD & CIVIC IMPACTS
	Assembly/Use	**Constraints/Preparations**	**Public Transit**	**Vehicular**	**Parking**	**Pedestrian**		
Key Considerations	ASSEMBLY • Size of site • No. of parcels, owners and major owners • % in public ownership • Assessed value of land and buildings • Current city tax revenue • Timing and availability of parcels • Any obvious difficulties in assembling parcels USE • Current major uses • No. of businesses and jobs • Uniqueness of site for current uses (i.e. waterfront site for maritime uses)	CONSTRAINTS • Physical limitations of site • Potential for and ease of future expansion PREPARATIONS • Required relocations of specific buildings, streets, rail, etc. • Special environmental considerations • Special geotechnical requirements • Road and service infrastructure modifications and improvements • Special premium incurred to build facility (e.g. air-rights)	• Proximity to transit system • Availability of local and regional bus service • Commuter rail service • Special transit services (e.g. special shuttle services to downtown) • Compatibility with planned transit improvements • Additional transit infrastructure improvements	• Proximity and connection to highway system • Availability of arterial streets • Convenience of vehicular service routes • Conflicts between patron and service routes • Impact on and compatibility with existing and proposed road system • Possible traffic problem areas • Additional roadway infrastructure improvements	• No. of on-site spaces provided by development • No. of off-site spaces on adjacent land provided by development • Existing and future public parking resources within 15-20 min. walk • Policy limitations on parking (e.g. district wide parking freeze) • Other available parking options (e.g. use of private parking in neighboring buildings) • Possible site-specific strategies to minimize parking demand (e.g. shuttle services to remote parking garages)	• Distance of pedestrian connections to transit stops, hotels, downtown, and other amenities • Special character of pedestrian route to site (e.g. connected to existing pedestrian or open space network) • General convenience and quality of pedestrian routes	• Proximity to hotels, downtown, shopping and other attractions compatible with conventions • Accessible to other visitor destinations • Convenient access to airport and transportation nodes • Easy connection to other exhibition facilities • Memorable location • Inherent site characteristics that allow for special layout and design of facility that are desirable to conventioneers and show organizers	NEIGHBORHOOD • Impact on adjacent neighborhoods on quality of life issues such as noise and traffic • Compatibility of existing land uses and future plans for area and adjacent neighborhoods • Potential for stimulating growth and development in area • Desirable existing or future uses or development opportunities foregone • Potential for physical improvement of area CIVIC • Potential for strong civic image • Potential and capacity for generous outdoor public space around facility
EXPOSITION	REQUIREMENTS • Easy to assemble: min. no. of parcels; significant public ownership; parcels available within 5 years. • Min. economic and fiscal costs • Current uses can be relocated	REQUIREMENTS • Min. 31 contiguous acres • Min. dimensions of 1800' by 700' (26 acres) for building footprint • Min. site preparation and premium costs • Site should allow for future expansion	REQUIREMENTS • Within 1/2 mile walk to any transit line (Green Line provides sufficient service)	REQUIREMENTS • Within 1/2 mile of major interstate highway • Designated service route separate from other traffic • Compatible with planned roadway improvements • Min. additional road infrastructure costs	REQUIREMENTS • 3,000 on-site spaces required	REQUIREMENTS • User-friendly pedestrian environment: active street level uses and visitor amenities; continuous street frontage	REQUIREMENTS • 600,000 sq. ft. of contiguous exhibition preferably on 1 level • 60 loading docks with direct truck access to exhibition floor • 10,000 seats and sufficient meeting space • Easy access to airport, hotels, retail and visitor destinations	REQUIREMENTS • Min. dislocation of existing uses • Improve quality of life of surrounding neighborhood • Compatible with existing uses and planned development • Spur future development
STADIUM	REQUIREMENTS • Same as above	REQUIREMENTS • Min. 20 contiguous acres (not including parking area) • Min. dimensions of 800' by 700' (12 acres) for stadium footprint • Min. site preparation and premium costs	REQUIREMENTS • Within 1/2 mile to high capacity transit service: Red or Orange lines • Green Line does not provide adequate capacity • Commuter rail service desirable but not essential	REQUIREMENTS • Within 1/2 mile of major interstate highway • Multiple arterial connections to highway necessary • Compatible with planned roadway improvements • Min. additional road infrastructure costs	REQUIREMENTS • 10,000 on-site spaces if high capacity transit is available; 15,000 spaces required if not • Dispersed off-site parking desirable	REQUIREMENTS • Designated and generous public open spaces for crowd circulation and pre and post game activities • Easy connection to transit stations	REQUIREMENTS • 70,000 seats • 150 luxury boxes • Easy vehicular access • Sufficient parking (10,000 to 15,000 spaces depending on proximity to high capacity transit)	REQUIREMENTS • Buffered and isolated from surrounding neighborhoods • Min. dislocation of existing uses • Provide civic presence • Sufficient open space around stadium must be provided for pedestrian circulation and congregation

● Advantages Outweigh Disadvantages

◐ Advantages Balance Disadvantages

○ Disadvantages Outweigh Advantages

FINAL SCREENING

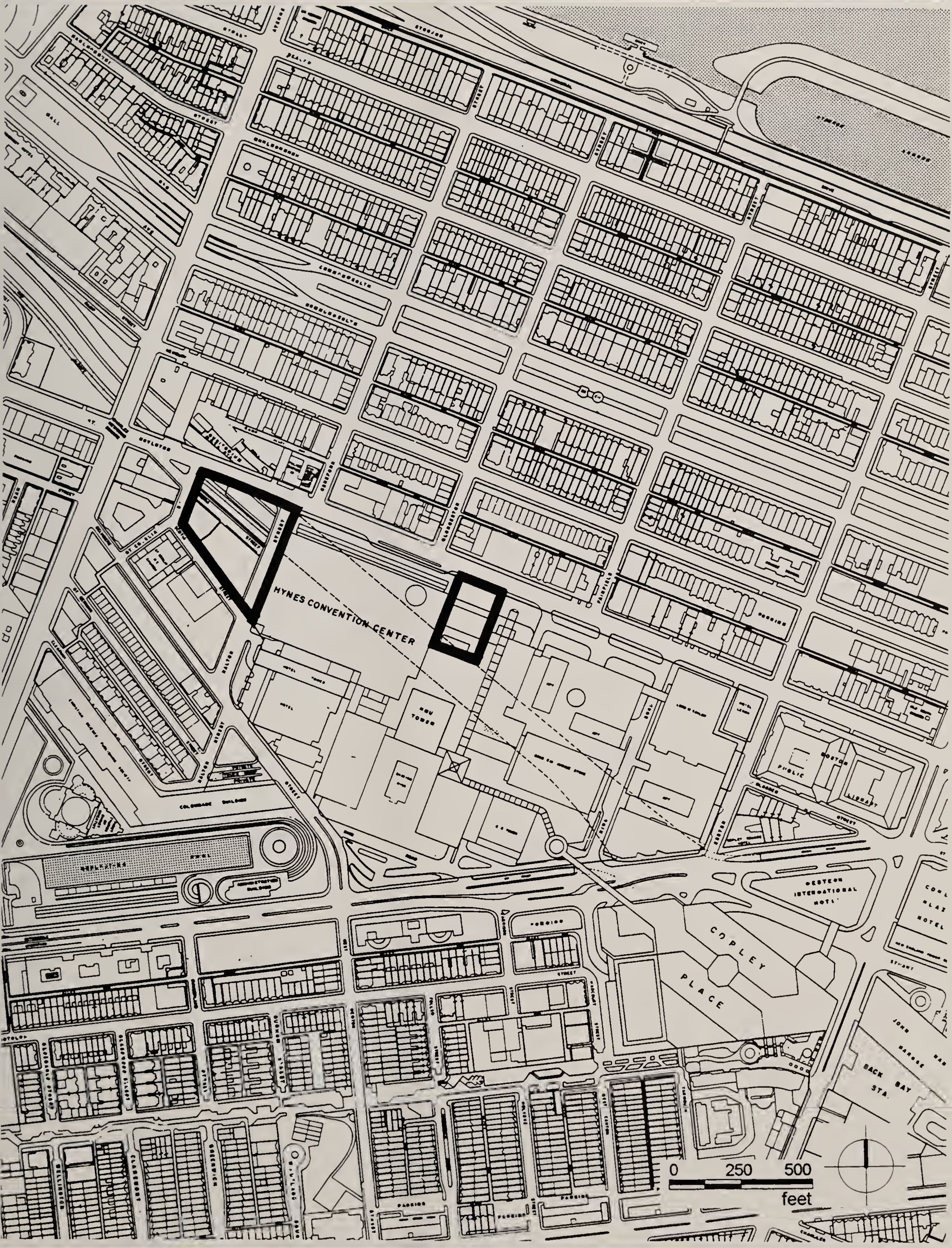
EXPOSITION SITES

Site	Site Assembly	Site Constraints	Transit Access	Vehicular Access	Parking	Pedestrian Access	Facility Marketability	Neighborhood Impacts	
C Street	◑	●	●	●	●	●	●	●	Recommended for further study
Northern Ave. (Massport)	◑	◑	●	●	●	◑	●	●	Alternate
Mass. Ave.	○	○	◑	●	●	◑	◑	○	
South Bay	◑	◑	◑	●	●	○	○	●	
Back Bay (Hynes Expansion)	○	○	●	○	○	●	◑	○	

STADIUM SITES

Site	Site Assembly	Site Constraints	Transit Access	Vehicular Access	Parking	Pedestrian Access	Facility Marketability	Neighborhood Impacts	
South Bay	◑	◑	◑	○	○	◑	◑	◑	Recommended for further study
Mass. Ave.	○	○	◑	○	○	◑	◑	○	
Northern Ave. (Massport)	○								
C Street	○								
Back Bay (Hynes Expansion)	○								

BACK BAY


HYNES CONVENTION CENTER
COPLEY PLACE
WESTERN INTERNATIONAL HOTEL
BOSTON PUBLIC LIBRARY
BACK BAY STA.
JOHN HANCOCK
0
250
500
feet

BACK BAY (HYNES EXPANSION)

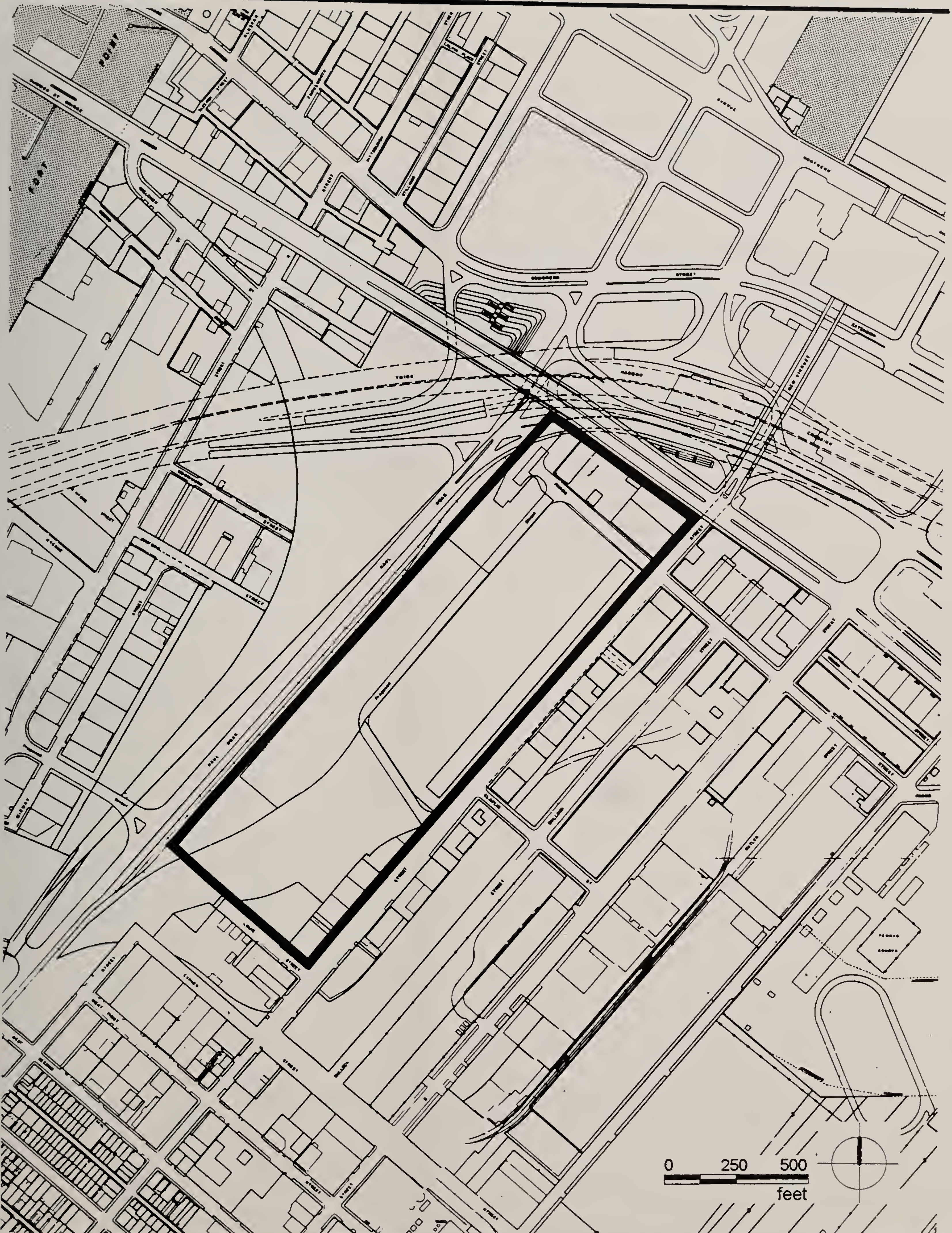
	SITE		ACCESS				FACILITY MARKETABILITY	NEIGHBORHOOD & CIVIC IMPACTS
	Assembly/Use	**Constraints/Preparations**	**Public Transit**	**Vehicular**	**Parking**	**Pedestrian**		
Key Considerations	• Small 3.66 acres site split on either sides of Hynes • 4 parcels and air-rights over Cambria and Dalton St. required to the west • Easement from Prudential required to the east • 7.5% in public ownership, 23.2% air-rights over existing public streets • Displaces 25 jobs at cinema and garage • Total assessed value of property is $8.53 million (average of $138.95 per sq. ft.) not including value of easement over public streets and Prudential plaza • Commercial property tax foregone $326,723 (FY94)	• Any further expansion constrained by St. Celia's Church to west, Sheraton Hotel to south, and Prudential mall to east • Dalton St. must remain open to traffic • Premium for air-rights structure over existing streets and Turnpike • Demolition required of adjacent $5.5 million cinema and garage • Further air-rights development over Turnpike cannot provide additional exhibition space contiguous with existing facility	• Strong connection to Green Line, less than 5 min. walk to Auditorium station	• Over Turnpike, but relies exclusively on single exit at Copley Square • All vehicular access via Mass. Ave. and Boylston St., which are primary roads serving the Back Bay and therefore likely to negatively impact local traffic • Service, patron and local traffic all rely on the same roads, which may result in conflicts • No marshaling area for service vehicles, especially if Cambria St. is eliminated • Special management required for receiving and temporary storage of trucks	• New on-site parking not feasible • Expansion will displace 550 public spaces in the Cheri Garage	• All Back Bay hotels and attractions within walking distance • Ideal pedestrian environment	• Centrally located in Back Bay next to hotels and retail, with easy connections to downtown and other visitor destinations • Next to Prudential Mall • Increases marketability of Hynes • Largest exhibition hall increased by 220% to 242,750 sq. ft. • New exhibition space split on 2 separate levels • Addition of 14 loading docks still well below industry standard of 1 dock for every 10,000 sq. ft. of exhibit space • Docks located below exhibition floor and rely on inefficient elevators for service	• Encroaches into adjacent residential neighborhood • Displaces existing service street and access • Displaces garage and theater, both valuable amenities to Back Bay and Fenway • Conflicts with approved Prudential development plans for front plaza • Displaces valuable open space in front of Prudential and St. Celia Church • Air-rights westward further extends Prudential megablock • Boylston St. frontage extended to Mass. Ave., improving pedestrian environment
EXPOSITION	○	○ Total new exhibition space of 242,000 sq. ft., with 132,750 sq. ft. contiguous with halls in Hynes	●	○ Service traffic difficult to manage	○ Further diminishes existing parking supply for Back Bay	●	◑ Still insufficient contiguous exhibition space	○
STADIUM	○ Stadium not possible No adjacent site available							

● Advantages Outweigh Disadvantages

◑ Advantages Balance Disadvantages

○ Disadvantages Outweigh Advantages

C STREET



C STREET

	SITE		ACCESS				FACILITY MARKETABILITY	NEIGHBORHOOD & CIVIC IMPACTS
	Assembly/Use	Constraints/Preparations	Public Transit	Vehicular	Parking	Pedestrian		
Key Considerations	• 27.4 acres • 11 owners and 14 parcels • Negligible public ownership (2.3%) • Displaces 14 businesses with 284 employees • Total assessed value of property is $10.4 million (average of $7.19 per sq. ft.) • Commercial property tax foregone $436,770 (FY94)	• Site mostly vacant and requires minimal relocation and preparation • Haul Rd. and rail tracks must be maintained in current positions • Regular configuration of site allows for easy phasing of construction and great potential for future expansion	• Walking distance (1/2 mile) to Red Line and commuter rail service at South Station • 1 block from proposed Transitway station at World Trade Center (operational 1997)	• Good highway access, adjacent to Seaport Access Highway • Poor intersection at new Congress St. may create traffic bottleneck • Summer St. and Northern Ave. provide alternate connections to highway • Direct truck route connection to Haul Rd. • Elevated vehicular access off Summer St. allows separation of patrons from truck service • New Artery design will accommodate heavy traffic volume for this district • Main access from the north will minimize traffic through residential neighborhood	• Subject to South Boston Parking Freeze • Up to 3,000 on-site spaces possible under exhibition hall • Potential for sharing parking with adjacent future Post Office and Massport garages • Additional 3,500 spaces in structures can be located across Haul Rd. off A St. to accommodate future expansion	• 10 min. walk across Fort Point Channel to South Station and downtown • Climate controlled people mover connection possible along Viaduct St. to Transitway station, World Trade Center, hotels and waterfront	• Close to downtown • Good connection to airport • Proximity to World Trade Center and existing compatible uses allow area to be marketed as new exposition district • Remote from Hynes and Back Bay hotels • Elevated access off Summer St. isolates patron and service traffic, improving operational efficiency • 600,000 sq. ft. contiguous exhibition on 1 level possible, with capacity to double exhibition space in future	• Relatively close to a residential neighborhood, but buffered by industrial district • Complex will anchor new related development in the Fort Point Channel district and waterfront • Accessibility from downtown allows for natural integration in future • Elevated Summer St. substantially reduces perceived massing and profile of exhibition hall • Complex will be less obtrusive among similarly scaled warehouses south of Summer St., and allow scenic waterfront sites for hotel and tourist development
EXPOSITION	◑	● Can accommodate up to 634,500 sq. ft. of exhibition space on one contiguous level	●	●	●	●	●	●
STADIUM	○ Site too narrow for stadium							

●
Advantages Outweigh Disadvantages

◑
Advantages Balance Disadvantages

○
Disadvantages Outweigh Advantages

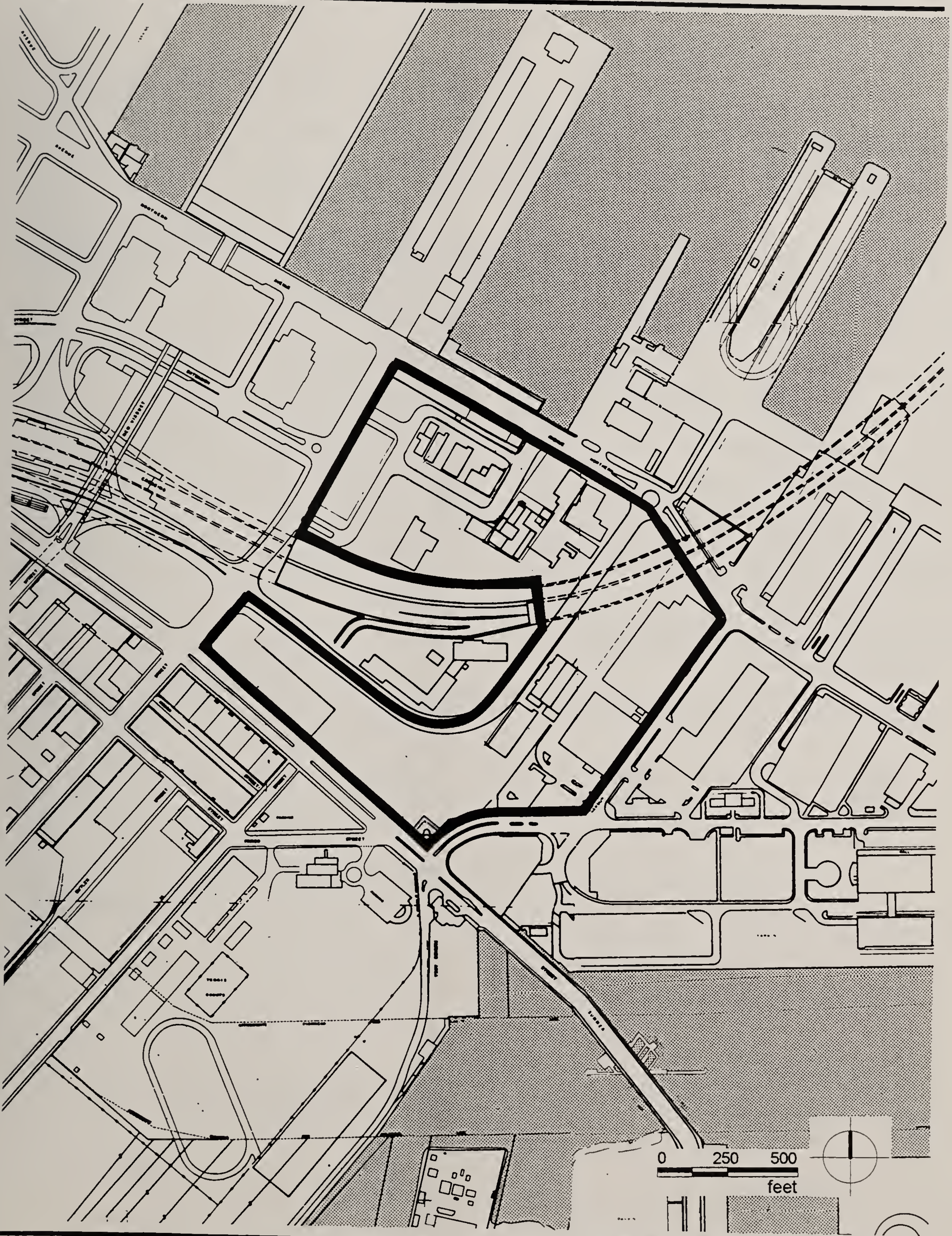
MASSACHUSETTS AVENUE

MASSACHUSETTS AVENUE

	SITE		ACCESS				FACILITY MARKETABILITY	NEIGHBORHOOD & CIVIC IMPACTS
	Assembly/Use	Constraints/Preparations	Public Transit	Vehicular	Parking	Pedestrian		
Key Considerations	• 67.8 acres, 13% existing public roads • 78 owners and 198 parcels • 11% in public ownership • Displaces 69 businesses of mixed variety and 2300 jobs • Displaces 108 housing units and residential property valued at $3.4 million • Total assessed value of property is $ 30.9 million (average of $10.88 per sq. ft.) • FY94 property tax foregone $1,131,602 (4 % residential)	• Site parcels divided by Mass. Ave. and Southampton St., both major arterial streets • Significant demolition required • Expansion options limited by adjacent residential neighborhoods	• Close to Red Line, within 3/4 mile of Andrew, but pedestrian connections need to cross over Amtrak and MBTA rails and Expressway • 1 mile to Orange Line at Ruggles • Good potential for connection to south side commuter rail, but requires a new station • Close to future Washington St. replacement transit service • Possible future connection to Crosstown transit system • Far from South Station and Amtrak regional rail service	• Direct access to Expressway, but relies on 2 inadequate exits • Compatible with new Artery alignment, but requires modification of Mass. Ave. connector • Service and patron traffic rely on the same roads, which may result in conflicts • Mass. Ave. and Melnea Cass Blvd. provide alternate access routes, relieving reliance on Expressway, but potentially creating serious traffic problems for local neighborhoods • Require construction of new on-site loop road	• Not subject to parking freeze regulation • Up to 8,000 new parking spaces possible in structures across Mass. Ave. • Concentrating new parking may cause traffic bottleneck • Adjacent to Biosquare garage with 2,000 spaces and 15 min. to Ruggles garage with 1,000 spaces	• Pedestrian route to Back Bay via Mass Ave. • 15-20 min. walk to Andrew and Ruggles • Surrounding area lacks uses and amenities to support pedestrian activities • Multilane loop road around complex creates barrier to pedestrian access	• Relatively close to Back Bay and Fenway, but connections are difficult, and not linked with retail and other pedestrian friendly uses • Lack of easy pedestrian connections would require conventioneers to be shuttled to site • Few compatible uses and attractions for conventioneers in immediate area • Remote from downtown • Site abuts jail with no buffer • Hotel can be accommodated on site, but relies exclusively on exposition business with no secondary market	• Site immediately borders Orchard Park housing complex with inadequate buffers to protect residents • Significant industrial uses will be displaced • Extensive spill over traffic into local neighborhoods likely • Complex may stimulate and anchor some new development in Newmarket area • Limited potential for generous public open space required for stadium
EXPOSITION	○ Significant negative impact on jobs and city revenue Difficult to assemble large no. of private parcels	○ Accommodates up to 690,000 sq. ft. of exhibition space on 1 level Significant site limitations for future expansion	◑ Conventioneers rely on private shuttles because of difficult connections to transit stations	●	●	◑	◑	○ Significant impact on existing neighborhood
STADIUM	○	○	◑ Requires significant supplementary shuttle services Limited regional rail transit	○ Insufficient on and off ramps to handle traffic from highway	○ Significant off-site parking required	◑	◑ Vehicular access and parking both problematic	○ Significant impact on existing neighborhood

●	◑	○
Advantages Outweigh Disadvantages	Advantages Balance Disadvantages	Disadvantages Outweigh Advantages

NORTHERN AVENUE



NORTHERN AVENUE

	SITE		ACCESS				FACILITY MARKETABILITY	NEIGHBORHOOD & CIVIC IMPACTS
	Assembly/Use	Constraints/Preparations	Public Transit	Vehicular	Parking	Pedestrian		
Key Considerations	• 30.9 acres, 5.1% existing streets • 15 owners and 27 parcels • 80% publicly owned (Massport 42%, EDIC 25%, Federal government 10%, State 3%) • Third Harbor Tunnel currently under construction through the site • Displaces 39 businesses with 852 employees mostly in Marine Industrial Park • Total assessed value of property is $20.16 million (average of $14.22 per sq. ft.) • Commercial property tax foregone $184,102 (FY94)	• Third Harbor Tunnel boat section passing through site must remain open for ventilation of tunnel • Operation of new tunnel control center and emergency entry into tunnel cannot be compromised • Relocation of Haul Rd. to Harbor St. required • Partial relocation or extension of Transitway required • Conrail tracks to seaport must be maintained • Ch.91 designation on northern portion of site • Awkward configuration and physical constraints of site limit size of development and future expansion	• 1 block from proposed Transitway terminal (operational 1997) • Development provides additional incentive to upgrade and extend Transitway further east to Marine Industrial Park • 1 mile to Red Line and commuter rail at South Station • Future water shuttle to airport, downtown and remote parking locations	• Good highway connection • Multiple arterial roads help disperse traffic • Poor intersection at new Congress St. may create traffic bottleneck • Traffic congestion may result from limited turnaround at the end of Northern Ave. • New Artery design has already anticipated heavy traffic volume for this area north of Summer St. • Direct service connection off Haul Rd. • Relocation of Haul Rd. to Harbor St. may compromise its function and impact access to Marine Industrial Park	• Subject to South Boston Parking Freeze • 2,000 spaces possible under exhibition halls • Additional 3,000 spaces possible in garages between Haul Rd. and Summer St. • Shared parking with adjacent new Massport garage and office and hotel development	• 20 min. walk across Fort Point Channel to South Station and downtown • Waterfront walk to Downtown is an extension of existing Harbor Walk system • Pedestrian environment will dramatically improve with the on-going and future development of the district • Climate controlled and people mover connection possible to World Trade Center and hotels	• Close to downtown • Good connection to airport • Proximity to World Trade Center and existing compatible uses allow area to be marketed as new exposition district • Remote from Hynes and Back Bay hotels • 600,000 sq. ft. exhibition cannot fit on 1 level • Waterfront exposition center can be integrated with new cruise ship terminal providing greater visibility for cruise ships and unique venue for international conventions • Cruise ships and airport will provide strong secondary market for new hotels	• Well buffered from residential neighborhoods • Complex will stimulate active exposition related development along waterfront • Accessibility from downtown allows for natural integration in future • Possible conflict with State planned rail port • Site identified by Harbor Park Zoning as support land in designated port area • Conflict with MER district • Prominent but massive presence along waterfront • Waterfront better suited for small scaled hotel development than windowless exposition hall
EXPOSITION	◐ Significant negative impacts on jobs Large public land ownership allows for easy assembly	◐ 600,000 sq. ft. of exhibition space possible on 2 separate levels Difficult physical limitations and limited expansion possibilities	●	●	●	◐ Relatively remote from downtown	●	●
STADIUM	○ Site too small for stadium							

● Advantages Outweigh Disadvantages

◐ Advantages Balance Disadvantages

○ Disadvantages Outweigh Advantages

SOUTH BAY


City of Boston Central Maintenance
Premier Garage
Radio Transit Repair Shop
MBTA South Bay Maintenance Center
MBTA Bus Garage
Dorchester Brook Conduit
Quincy Market Cold Storage Warehouse Co
Circle
Foodmart Road
Widett Circle
The Flower Mart
City of Boston Incinerator
MBTA Red Line
Street
Avenue
0
250
500
feet

SOUTH BAY

	SITE		ACCESS				FACILITY MARKETABILITY	NEIGHBORHOOD & CIVIC IMPACTS
	Assembly/Use	Constraints/Preparations	Public Transit	Vehicular	Parking	Pedestrian		
Key Considerations	• 47.2 acres • 5 owners and 12 parcels • 68.7% in public ownership • Displaces 21 mostly food processing related businesses and 750 employees (these industries would have to be moved as a group, limiting relocation options) • Total assessed value of property is $22.2 million (average of $26.89 per sq. ft.) • Commercial property tax and 121A revenue foregone $777,678 (FY94)	• Premium for dealing with Roxbury Canal and Dorchester Brook conduits that run underground through site • Likely contaminated soil on site • Loop track must be maintained and relocated • Relocation of new $5 million Amtrak Inspection facility • Relocation of 5.7 million facility owned by Boston Food Market • Expansion capacity of site limited by adjacent highway and rail road	• Close to Red Line, within 3/4 mile of Broadway and Andrew stations, but pedestrian connections need to cross over Amtrak and MBTA rails • Good potential for on-site connection to south side commuter rail and Amtrak using loop track, but requires a new station • Loop track allows for rail shuttle to Back Bay and Hynes • Possible future connection to Crosstown transit system	• Direct access to Artery and Expressway, but inadequate exits • Compatible with new Artery alignment, but requires modification of Frontage Rd. and Mass. Ave. connector • Service and patron vehicles can be separated on different levels • Direct access to Haul Rd. • Easy access to Mass. Ave. • Proximity to highway limits traffic through adjacent neighborhoods • Limited arterial road connections restrict vehicular access to Expressway and interchanges, which will impact Expressway traffic	• Not subject to parking freeze regulation • Significant on site parking possible • Adjacent to Biosquare garage with 1,000 spaces • Additional new parking facilities can be located across Expressway off Southampton St. • Limited secondary market for parking during week (too close to downtown for park and ride commuter use)	• Adjacent to South End, but Expressway makes pedestrian connections very difficult • 15 min. walk to Andrew and Broadway stations, but pedestrian connections need to cross over Amtrak and MBTA rails • Surrounding area lacks uses and visitor amenities to support pedestrian activities	• Elevated access level allows patrons and service traffic to be separated on different levels, improving efficiency and attractiveness of exposition center • Good connection to airport • Close to downtown but isolated by highway and rail road • Remote from Back Bay hotels and retail • Lack of easy pedestrian connections would require conventioneers to be shuttled to site • Adjacent area is mostly industrial uses, with few compatible uses and attractions for conventioneers	• Impacts well buffered from residential neighborhoods • Unlikely to spur new development in adjacent area because of isolation • Stadium provides strong image as southern gateway to the city • Inadequate room for generous public space required for stadium
EXPOSITION	◑ Significant negative impact on jobs and city revenue Large public ownership allows for easy assembly	◑ Accommodates up to 650,000 sq. ft. of exhibition space on 1 level	◑ Conventioneers rely on private shuttles because of difficult connections to transit stations	●	●	○	○ Too isolated from tourist infrastructure and destinations	● Impacts isolated
STADIUM	◑	◑ Olympic Stadium possible	◑ Requires significant supplementary shuttle services Limited regional rail transit	○ Expressway does not have sufficient capacity to handle peak traffic loads	○ On-site parking inadequate; significant off-site parking required	◑	◑ Vehicular access and parking both problematic	◑ Prominent civic image but significant traffic impact

●	◑	○
Advantages Outweigh Disadvantages	Advantages Balance Disadvantages	Disadvantages Outweigh Advantages

4. Neighborhood Impact.

The potential for impacts on nearby communities is far more likely with a football stadium than with an exposition center. Extensive crowds converging all at the same time create the potential for noise and traffic impacts. In particular, the post-game exodus of vehicles could spill over into local streets. Consequently, a stadium site should be remote from surrounding neighborhoods and have extensive buffering.

C. RECOMMENDATIONS

Interpreting the Results: Exposition Center

Five sites were studied in great detail with respect to their suitability as a possible exposition center location. Of these, three sites -- Back Bay (Hynes expansion), Massachusetts Avenue and South Bay -- were eliminated. C Street is recommended as a location for an exposition center, with Northern Avenue as a possible alternative. (As will be discussed in the last section, additional technical studies are needed to further explore the suitability of these sites in terms of traffic characteristics, environmental impacts and infrastructure costs.) The following summary highlights some of the main points that led to these recommendations.

C Street (recommended)

C Street is close to downtown and South Station. Moreover, it is directly adjacent to Summer Street, an arterial that is extending the downtown into the Fort Point Channel District, becoming a main corridor for commercial uses. With the development of the new federal courthouse, along with the World Trade Center complex of convention space, hotel and parking, the area immediately across the Fort Point Channel is drawing more and more of the uses characterized by a downtown economy.

The site is largely vacant and requires comparatively minimal business relocation.

C Street is only one-quarter mile to the planned South Boston Transitway stop at the World Trade Center and to future water shuttle service. Red Line and commuter rail service are available at South Station within a 10-minute walk.

The C Street site has excellent highway connections, given its direct adjacency to the Seaport Access Highway. Trucks could arrive, load and unload, and depart without ever driving on local streets. Vehicular access would be from the north, off Summer Street, and would not affect the South Boston neighborhood. While the C Street site has the capacity to accommodate

3,000 parking spaces, this site, like the one on Northern Avenue, is within the South Boston Parking Freeze area and thus subject to special rules and limitations regarding the development of parking spaces.

An exposition center at C Street would have many of the characteristics that the trade show and convention industry find attractive, such as excellent connections to the airport via the Third Harbor Tunnel and water taxi, as well as proximity to downtown.

In addition, C Street is close to an existing exposition facility, the World Trade Center, creating the potential for an active complex of visitor destinations. There are many compatible uses already in the immediate area or under development, including waterfront restaurants and museums. Also, a new hotel is planned at the World Trade Center.

While C Street is remote from the Hynes and Back Bay, the BRA believes that the advantages of developing a facility with the appropriate size, layout and access outweigh any disadvantage of locating the exposition center in a more peripheral area. In its favor, C Street has the advantage of being within walking distance to the World Trade Center and downtown.

From an urban design standpoint, at this location the entire facility can be depressed 40 feet into the ground, thus dramatically reducing its impact. With the front door at the intersection of the elevated Summer and Viaduct Streets, the facility's apparent height above street level would be a mere 40 feet, more in keeping with the scale and mass of adjacent structures. Locating the exposition center south of Summer Street will allow it to share in the synergy created by various waterfront uses, while reserving the choicest sites along the water's edge for other more active uses.

Northern Avenue (alternate)

The Northern Avenue site provides a waterfront location for the exposition center and would therefore serve as a special draw for convention and meeting activities. With appropriate design, the site could provide the setting for a unique waterfront image for the new exposition center. The location offers an opportunity for synergy with the waterfront uses. For example, were docking facilities for cruise ships to be developed across the street from this site, hotels, restaurants and retail shops would be supported by trade show and convention attendees as well as cruise ship patrons.

Northern Avenue shares some of the same attributes, both positive and negative, with the C Street site. Positive attributes include its close proximity to the World Trade Center. An exposition center at Northern Avenue would complement this facility and also benefit from proximity to a proposed hotel there. In addition, Northern Avenue, like C Street, has good vehicular access, particularly from Logan International Airport, and also access via water shuttle. On the other hand, Northern Avenue is even more remote from the Hynes and Back Bay. And, like C Street, Northern Avenue is within the South Boston Parking Freeze area.

In addition to these considerations, the Northern Avenue site is a longer walk from downtown than C Street and pedestrian access is difficult. In addition, there are unknown difficulties in dealing with the Third Harbor Tunnel, which cuts directly through the middle of the site. For example, with the Tunnel immediately underground, the first level of the exposition center might have to be raised, projecting the building's 110-foot height above grade directly along the waterfront, a serious consideration given its large size and windowless elevations. Foundation costs are likely to be high. The site also overlaps with the current route of the South Boston Transitway, which would have to be partially relocated at an added cost. This provides the opportunity, however, to consider extending the Transitway to the end of Northern Avenue, providing better access to the exposition center as well as the Boston Marine Industrial Park. This extension would add an additional $75 million to the overall development cost.

Siting the exposition center at Northern Avenue would provide a clear delineation of the boundary for the industrial area to the east and may serve to protect against encroachment from other commercial uses. At the same time, however, the construction of an exposition center would render the site unavailable for support uses for the maritime industrial economy of the port. A portion of the Northern Avenue site is identified in Boston's Harborpark Zoning as support land to a designated port area. In addition, the land adjacent to the site is designated as a local Maritime Economy Reserve District, raising concerns about possibly conflicting uses.

The site's awkward configuration and limited size would mean that the exhibition space would have to be developed on two levels of only 300,000 square feet each. This is not an optimal layout. If exhibition space is divided, a single level should have at least 400,000 contiguous square feet of exhibition space to attract trade shows in that size class. In addition, expansion is virtually impossible at this site, closing off the potential to enlarge the facility should market conditions warrant. In many ways, the site is better suited for hotels and other smaller-

SITES FOR FURTHER CONSIDERATION


C STREET


NORTHERN AVENUE


SOUTH BAY

scaled developments that can take advantage of the spectacular views from the site, and themselves create a more attractive development in this prominent waterfront location.

Key Comparison Between C Street and Northern Avenue

Site	Jobs Displaced	Development Cost	Development Potential	Land Use Potential	Pedestrian Access	Facility Design	Massing
C Street	284	$437.9 Million	• Not particularly unique or memorable location • On -site retail less attractive along Summer St.	• Best use for this site	• 1/2 mile to South Station	• 600,000 sq. ft. exhibition fits on 1 level • Expansion capacity to double exhibition space	• Structure 60 feet above Summer St. • Massive windowless building will be less obtrusive among similarly scaled structures south of Summer St.
Northern Ave.	852 (Conflict with Marine Industrial Park)	$555.6 Million ($75 Million on Transitway extension)	• Memorable location • On -site retail better in unique venue along Waterfront	• Scenic waterfront location has great development potential, especially for hotels and other active uses	• 1 mile to South Station	• 600,000 sq. ft. exhibition split on 2 levels • Very limited expansion possibilities	• Structure 120 feet above street level • Massive windowless structure not especially suited to waterfront location

Back Bay/Hynes Expansion (eliminated)

Expansion of the Hynes Convention Center was investigated extensively. The obvious benefits inherent in a Back Bay location add a great deal of value to the Hynes. If an expansion had been physically possible, the Hynes would surely rank as one of the most attractive large facilities in the country.

Unfortunately, after an exhaustive investigation, the BRA concluded that the site simply could not accommodate all of the components required for a first-rate facility. There were several reasons, but the most compelling was the inability to find room for an off-street area for trucks waiting to unload, instead of double parking on adjacent streets as they do now. In addition, there was not enough room to include a sufficient number of loading docks (30 to 40, which is already less than optimal) and to incorporate these loading docks on the same level as the exhibition floors. In the trade show industry today, the ability to load and unload large amount of materials from a number of different trucks quickly, efficiently and in a highly synchronized manner (or even simultaneously) is one of the most critical features of a facility. Ideally, trucks should be able to drive directly onto the exhibition floor itself to load and unload, and this is just not possible at the Hynes.

In addition, trucks would not have access to the second floor exhibition space, and would therefore have to use elevators, a time-consuming, cumbersome and inefficient means of load-

ing. The absence of a sizable off-street waiting area for trucks as well as other loading inefficiencies made it more likely that the additional truck traffic generated by an expanded Hynes could have a serious impact on Back Bay and South End streets, particularly if Cambria Street, which currently acts as a service street, were eliminated as would be necessary under an expansion plan. Finally, a Hynes expansion would incur high site premium costs, both for air-rights development over Cambria Street and over the Massachusetts Turnpike, as well as for the acquisition, relocation and demolition of the adjacent cinema and garage.

Future of the Existing Hynes Convention Center

The BRA does not believe that the development of additional exhibition space will have an adverse impact on the Hynes Convention Center. Rather, the Hynes is expected to retain its prominence for conventions, meetings and smaller shows less than 193,000 square feet of exhibition space, while a new, larger exposition center would attract large national rotating trade shows that cannot currently come to Boston because of limited space or unavailable engagement dates. The new facility would become Boston's premier location for large trade shows, while the Hynes would be expected to remain as Boston's primary convention and meeting center given its many advantages, including:

> *Superior Back Bay location.* The Back Bay is attractive to out-of-town delegates with its historic streetscape, ambiance and many restaurants, cafes and retail shops.
>
> *Nearby Hotels.* Boston has a large supply of convention class hotel rooms within two blocks of the Hynes (see Price Waterhouse study).
>
> *Exceptional Track Record.* Based on user survey results, Price Waterhouse found that the primary advantages of the Hynes are good management and well-trained staff.

Because of these and other advantages, the BRA believes that both the Hynes and the Back Bay's existing visitor infrastructure should continue to thrive.

Massachusetts Avenue (eliminated)

While the BRA strongly supports bringing jobs and economic revitalization to this area of the City, it has reservations about developing either an exposition center or a stadium at the intersection of Melnea Cass Boulevard and Massachusetts Avenue to further those objectives.

First, while an exposition center is expected to create about 208 permanent jobs on site, the proposed Massachusetts Avenue site currently contains approximately 2,300 jobs, 69 businesses and 108 homes, comprising an extensive business, industrial and residential community

that would be disrupted. Even with relocation assistance, the effects on individuals and businesses would be far-reaching. Moreover, this area is surrounded by residential uses in both the Roxbury and South End neighborhoods; development here offers few buffers to protect these neighborhoods. In addition, the main arterial connectors to the site (Massachusetts Avenue and Melnea Cass Boulevard) pass through residential neighborhoods, creating the potential for significant traffic impacts. The area contains few of the uses that complement an exposition center, such as hotels, restaurants, shops and entertainment venues. While Back Bay is technically accessible via Massachusetts Avenue, this route, at least at the present time, lacks an active pedestrian environment. By virtue of the areas predominantly residential, industrial and institutional character, it seems unlikely that such an environment would materialize in the future.

The BRA's analysis of the Massachusetts Avenue site found that the construction of either the exposition center or the football stadium individually resulted in serious impacts, such as job loss, business relocation and traffic congestion in both the Roxbury and South End neighborhoods. Combining these uses into a megaplex, as has been proposed by certain parties, would compound these impacts, resulting in burdens that outweigh anticipated benefits. Moreover, a multi-lane ring road proposed to surround the complex (designed to help alleviate traffic congestion) does not provide an adequate buffer to the neighborhoods and instead makes pedestrian access difficult.

South Bay (eliminated)

For some time, the South Bay site has been the focus of discussion for a combined facility or megaplex. The BRA believes that South Bay is not a suitable site for an exposition center, since it is isolated from the rest of the City by rail yards, industrial uses and highways, making it virtually impossible to walk from South Bay to downtown and Back Bay visitor destinations. Boston's reputation among event organizers as a walking city, and the desirability of incorporating this quality into the event experience, make South Bay a poor choice for an exposition center. The availability of transit connections at the MBTA's Broadway and Andrew Red Line Stations is not sufficient to overcome this isolation and create a premier exposition center.

Furthermore, there is limited room on-site for the development of amenities typically associated with convention use, such as hotels, restaurants, shops and entertainment venues. To develop such amenities off-site at adjoining locations would require making difficult connections

across rail yards and highways. Even were space available for the development of ancillary businesses, they would be located in an area that has practically no secondary market or source of business. For example, restaurants could not rely exclusively on conventions and trade shows, but would need patrons from other activities such as theaters, tourism or business meetings. As a consequence, during the time when the exposition center was not in use, those ancillary businesses would not have a dependable source of revenue and thus are unlikely to be developed.

Other concerns about South Bay include high site assembly and relocation costs, and the constraints on facility design posed by the surrounding rail tracks. In addition, development would come into conflict with both the Roxbury Canal and Dorchester Brook Conduit that run underground through the site, raising costs substantially. As will be discussed in the next section, South Bay should be studied further with regard to its use for a football stadium.

Interpreting the Results: Football Stadium

The study of possible sites for a football stadium indicates that there is no site within the City adjacent to both high-capacity rail (MBTA Red Line or Orange Line) and to multiple arterial roadways capable of accommodating the considerable traffic volumes generated by the post-game exodus of 10,000 to 15,000 cars without extensive roadway improvements.

The only potentially usable site is South Bay. The construction of a football stadium on the Massachusetts Avenue site would cause disruptions to surrounding neighborhoods because there is no effective buffer. Extensive spill-over of traffic into local neighborhoods is likely and a highly concentrated supply of parking in this area could cause traffic bottlenecks. Regional transit to the site is limited. Site assembly would be difficult given the great number of separate owners and significant dislocation of existing business, jobs and homes would result. Creating additional roadway infrastructure here would encroach significantly into surrounding neighborhoods.

The BRA recommends that the Commonwealth fund take a study to determine the feasibility of constructing the new infrastructure that would be required at South Bay to allow the traffic to flow smoothly at the end of the games. Because it is isolated from surrounding neighborhoods, creating additional roadway infrastructure at South Bay would have limited impacts on surrounding neighborhoods. Should the need arise for an Olympic stadium, there are several sites that could accommodate a temporary (dismountable and reusable) facility with its much abbreviated parking requirements.

CHAPTER 5

ECONOMIC AND FISCAL IMPACTS

Key Conclusion:

When the exposition center opens in the year 2000, some 187,621 attendees would attend trade shows, creating $225.5 million in direct and indirect economic output and $12 million in tax revenues for the first year of operation. By 2010, when the exposition center reaches full capacity, 371,622 attendees would attend trade shows, creating $419.9 million in output and $23.2 in tax revenues annually. Additional tax revenue would be generated by the development of hotels to service new visitors to the region. Total development cost for an exposition center located on C Street $437.9 million; for an exposition center located on Northern Avenue would be $555.6 million.

A. ECONOMIC AND FISCAL IMPACTS ATTRIBUTABLE TO THE EXPOSITION CENTER

This section estimates the number of new attendees that can be expected to come to Boston on an annual basis, and the economic and fiscal impacts associated with their spending. For the purposes of this analysis, the BRA's review of the trade show market found that there are many shows in the 500,000 to 600,000 square foot range. Since the BRA believes it would be desirable to have the capacity to host shows in this size range, the BRA chose the median -- 550,000 square feet of exhibition space (see Appendix 1), to study the impacts of a facility with exhibition space of this magnitude. It should be noted that all dollar figures used in this chapter are constant dollars, measured at 1994 prices unless otherwise noted. They have not been increased to reflect anticipated future inflation.

It is important to remember that there are benefits beyond those that can be quantified. For example, business people attending trade shows will experience Boston, perhaps influencing their company's future investment decisions. Trade show attendees may return to Boston as tourists at another time. Prominent events that receive media publicity may bring Boston into a more national spotlight.

ECONOMIC IMPACT OF THE EXPOSITION CENTER (1)

Summary	*Year 2000*	*Year 2010*
Occupancy Rate	26 %	52 %
Net New Attendees	187,641 annually (2)	371,622 annually
Economic Output (3)		
From off-site delegate spending	$105.7 million	$209.4 million
Total direct and indirect	*$193.5 million*	*$383.3 million*
From on-site operations	$ 16.2 million	$ 18.2 million
Total direct and indirect	*$ 31.9 million*	*$ 35.8 million*
Total annual output	*$225.5 million*	*$419.1 million*
Tax Revenue		
Construction period	$18.1 million	
Annual, upon completion (4)		
From visitor spending		

	Municipal	State	Total	Municipal	State	Total
Direct	$2.2m	$ 4.9 m	$ 7.1 million	$4.3m	$ 9.7m	$14.0 million
Indirect	$ 0m	$ 4.3 m	$ 4.3 million	$ 0m	$ 8.5m	$ 8.5 million
Total	**$2.2m**	**$ 9.2 m**	**$11.4 million**	**$4.3m**	**$18.2m**	**$ 22.5 million**

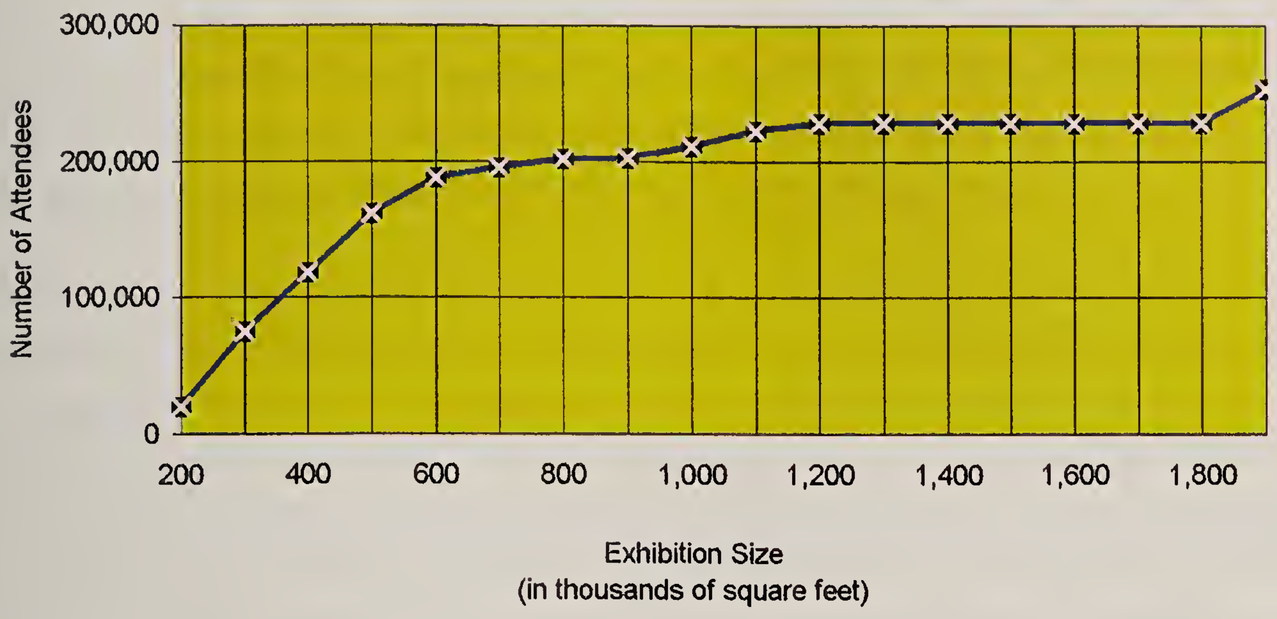
From exposition center operations	$ 0.6 million	$ 0.7 million
Total annual taxes	*$ 12 million*	*$ 23.2 million*
Jobs		
Construction (between 1996 and 2000)	2,215	NA
Permanent		
On-site	463	521
Off-site	3,049	6,039

Note:

1. Estimates based on 550,000 square feet of exhibition space; all dollars in 1994 prices.
2. Net new attendance does not include consumer shows.
3. Direct spending is spending by event attendees for hotels, restaurants, taxis and entertainment. Indirect spending occurs when Massachusetts workers and businesses who receive money from this new spending activity themselves in turn spend it.
4. Direct tax revenues are generated from spending by attendees in activities that are taxed by the Commonwealth, for example,from the meals tax, sales tax and hotel occupancy tax. Indirect tax revenue is generated from (1) income tax on the increased income of workers at hotels, retail shops, restaurants and entertainment venues; (2) corporate tax from increased corporate earnings; and (3) sales tax from retail spending by workers and businesses.

FIGURE 5 PROJECTED BOSTON ATTENDANCE*

*Based on number and cycle of rotating shows, seasonal and locational preference, and competition from other cities.



A new Boston exposition center with 550,000 square feet of exhibition space would attract approximately 187,641 new attendees when it opens in the year 2000. After this size, there is little additional attendance to be realized.

While these estimates will help to inform the discussion around public financing, the BRA recognizes that the question of whether and to what extent public financing is appropriate will ultimately be decided by the State Legislature. Nonetheless, the BRA has performed this preliminary analysis of economic impacts because the City of Boston wants to ensure that an economically healthy and viable facility is developed within its boundaries.

Attendance.

Attendance at the new Boston exposition center will come from a variety of different types of shows with differing characteristics. The two most important types of shows are *rotating trade shows* or shows that are held in a different locale each year and *permanent trade shows* or shows that are held annually in the same locale. The following analysis of attendance is based on the presumption that Boston's new exposition center will attract these two broad categories of events:

> National rotating trade shows that are too large for the Hynes and that would book a Boston facility with 550,000 square feet of exhibition space if one were available.
>
> Permanent shows (i) that would relocate to Boston from another city, (ii) that exist in Boston today but would change venue and, (iii) that do not exist today.

In the case of rotating trade shows, attendance is estimated at approximately 155,934 when the exposition center is opened in the year 2,000. Given that many rotating trade shows book locations about five years in advance, we can expect that as soon as the project is approved, marketing can begin. Thus, during the four- year construction period, the facility would lease up in anticipation of project opening by the year 2000. Attendance from rotating shows is based on information about rotation cycles and the regional capture rate. A detailed calculation of attendance from rotating trade shows is presented in Appendix 1.

While it is reasonable to expect that Boston can get a fair share of rotating trade shows from the time the facility opens, in terms of permanent shows, however, there is a lag time to reflect the gradual evolution of permanent shows toward the new venue in the market -- Boston. That is, it takes some time for trade show organizers to become cognizant of and more familiar with the new Boston facility. Some organizers of permanent shows may decide to relocate a show presently fixed elsewhere or to establish a new show specifically for this Boston facility. In general, organizers of permanent shows can be expected to be much more circumspect in locating permanent shows as opposed to rotating shows, because with the latter, there is no commitment if the show is unsuccessful and the show is under no obligation to return.

Because the market for permanent shows at the new Boston facility will develop over time, its impact is phased or incremental because organizers will need time to plan and implement a Boston location. Fifteen years have been allowed for this market to expand at a constant, non-compound rate, commencing with project announcement, through the year 2010 when the facility is fully occupied. Attendance from this category of shows is small in the year 2,000 (only about 31,707 when the facility opens), but this number will grow to 140,802 in the year 2010. The chart above presents estimates of attendance from both rotating and permanent trade shows for the opening year 2000 and at full capacity in the year 2010.

A total of 187,641 new trade show attendees can be expected to come to the facility when it opens in the year 2000. (See Figure 5.) By the year 2010, it is estimated that total attendance will grow to 371,622. It should be noted that these attendance estimates incorporate a steady four percent annual compound growth for both rotating and permanent segments of the trade show market.

Not included in these attendance figures are visitors to consumer shows. While the hosting of consumer shows has a significant impact on the operational cost of the facility, attendance at these events is local and thus most spending is transferred from other local spending. There-

fore, the fiscal and economic impact of consumer show attendance is not significant. Consumer shows would, however, account for an additional 15 percent occupancy or utilization over and above use by national trade shows.

Spending

Year 2000. By the year 2000, we estimate that the facility would be operating at 26 percent occupancy from national trade shows. Spending by the additional 187,641 convention and trade show attendees coming into the region would infuse an estimated $105.7 million of direct spending into the local economy every year. This amount reflects spending for hotels, restaurants, taxis and entertainment. But the effect of this spending goes well beyond these initial purchases. There is a multiplier effect as Massachusetts workers and businesses that receive money from this new spending activity themselves in turn go out and spend it. For example, direct spending occurs when an attendee purchases a taxi ride. Indirect spending occurs when the taxi driver, having realized more income, goes out and purchases a new set of tires. The multiplier effect is calculated using a factor of 1.96, derived from multipliers for the Commonwealth of Massachusetts published by the U.S. Department of Commerce, Bureau of Economic Analysis. (See Appendix 2.) The BRA has estimated that the total direct and indirect economic output arising from these new attendees amounts to approximately $193.5 million. In addition, the operations of the exposition center will generate 31.9 million in economic output.

	Rotating	Permanent	Total Attendance	Occupancy Rate
Year 2000	155,934	31,707	187,641	26 percent
Year 2010	230,820	140,802	371,622	52 percent

Year 2010. By 2010, when the facility's trade show occupancy rate has reached 52 percent (considered more or less at full capacity), spending by an estimated 371,622 convention and trade show attendees would infuse $209.4 million of direct spending into the local economy. This would translate to a total of $383.3 million in total direct and indirect economic activity. The operations at the exposition center itself will add another $35.8 million in economic output.

Annual Tax Revenue from Off-Site Spending by Visitors

Year 2000. In the first year of operation, annual state and local tax revenues from off-site spending by visitors to the exposition center will total $11.4 million in the year 2000. This tax take is comprised of $7.1 million in direct taxes from visitor spending at exposition center events and at hotels, restaurants, stores and entertainment venues throughout the region, and an additional $4.3 million of indirect tax revenue that would be generated from employment and wages of workers at hotels, restaurants, stores and entertainment venues supported by the center throughout the region, and from corporate earnings.

The Commonwealth would receive the largest portion of annual tax revenue, amounting to $9.2 million in the first year of operation, consisting of corporate, income, sales, meals and 5.7 percent hotel taxes. Municipal revenues, amounting to $2.2 million annually, would consist of the 4.0 percent local option hotel tax. The amount accruing to Boston, as opposed to other municipalities, would depend on where new hotels were located and how the concentrated demand from large exposition center events is absorbed by the metropolitan hotel industry. In addition, Boston could receive some payment in lieu of taxes (PILOT) from the Commonwealth for the exposition center itself. As will be discussed in the next section, the anticipated development of hotel rooms will also generate additional economic impact, state tax revenue and municipal property tax revenue.

Year 2010. Ten years after the opening of the exposition center, total tax revenues will have risen to a stable $22.5 million annually. All but $4.3 million of this amount will accrue to the Commonwealth of Massachusetts.

Annual Tax Revenue from On-Site Operations of Exposition Center

The operations of the exposition center itself will also produce tax revenue. Approximately $640,000 annually is expected to accrue to the Commonwealth of Massachusetts. When operations stabilize in the year 2010, this annual tax yield will be $720,000. This represents income taxes levied on the wages of exposition center workers, sales taxes levied on purchases made with this new income, and increased corporate taxes resulting from increased business conducted by area vendors.

One Time Tax Revenue

In addition to the annual taxes outlined above, one-time tax revenue of $18.1 million would be generated over the construction period of the exposition center. All one-time tax revenue accrues to the Commonwealth of Massachusetts.

Employment

Employment generated by the new exposition center would be considerable. Throughout the four-year construction period, 2,215 jobs will be generated. Approximately 463 permanent jobs with a total compensation of $5 million annually would be created from operations at the exposition center itself. In the local economy, another 3,049 jobs would be created by the year 2000. As the exposition center's occupancy rate increases, permanent jobs in the local economy would continue to grow, totaling some 6,039 jobs by the year 2010.

B. ECONOMIC FISCAL IMPACTS ATTRIBUTABLE TO NEW HOTEL DEVELOPMENT

The development of an exposition center will bring additional convention and trade show attendees into the region and create additional demand for hotel rooms. As a consequence, the City of Boston as well as other municipalities stand to benefit in two ways. First, it is likely that this demand would induce the development of new hotels in Boston and other cities. Second, there would be additional room sales each night for existing hotels as well.

Hotel Room Demand

Year 2000. It is estimated that approximately 187,641 new attendees would come to events at the new exposition center in its first year of operation (the year 2000) and that 70 percent of them will come from outside the Boston area and stay in a Boston-area hotel for an average of 3.2 days. With the average event drawing about 14,865 attendees, hotel demand for a typical large event will require 10,405 rooms each night over the entire 3.2 day period. To illustrate the impact on the current Boston hotel market, this would require 87 percent of Boston's current 11,966 hotel room supply or 30 percent of the current metropolitan area supply. Total occupancy days generated over the course of the year 2000 could support 1,646 hotel rooms throughout the region at a 70 percent occupancy rate.

Year 2010. In the first 10 years of operation, the BRA anticipates increased growth of shows as organizers factor in the Boston facility and new shows come into existence. By 2010, attendance at the Boston exposition center is expected to have grown to approximately 371,622 attendees annually. This number of attendees could support up to 3,259 hotels rooms throughout the region.

In terms of the share of hotel demand that Boston is likely to absorb, the BRA estimates that Boston could absorb about 43 percent of the total demand, while other surrounding municipalities would absorb the rest of 57 percent.

Annual Tax Revenue

The fiscal yield in the year 2000 from the development of 1,646 hotel rooms would be approximately $4.1 million in property tax revenue (average $2,500 per room). In 2010, hotel rooms developed in the region would total 3,259, and the total property tax yield would be about $8.1 million. This assumes that the hotels are fully taxable *(i.e.*, not constructed on tax-exempt property, such as on property owned by the state).

One-Time Tax Revenue

The construction of new hotels will also generate tax revenue. The construction of approximately 1,646 hotel rooms will result in the generation of approximately $8.6 million in direct and indirect taxes, all of which accrue to the Commonwealth of Massachusetts. By the year 2010, all of the new hotel demand generated by the construction of the exposition center has been absorbed with the construction of a total of 3,259 rooms. This would bring the total state tax revenue attributable to hotel construction up to $17.2 million.

Employment

The development of new hotels between 1996 and 2000 would create some 845 jobs related to construction. Over the next ten years, between 2000 and 2010, another be 330 jobs related to the continued construction of hotels would be created.

C. COSTS RELATED TO EXPOSITION CENTER

The costs associated with the development of an exposition center are summarized below and provided in greater detail in Appendix 3. The costs associated with a football stadium have not been estimated. A traffic study and an evaluation of the new infrastructure needed for a football stadium should be completed before a significant cost analysis can be undertaken.

Exposition Center Total Development Cost

To estimate the cost of developing a facility containing approximately 550,000 square feet of exhibition space, the following costs were evaluated: acquisition of private property, value of publicly-owned property, business relocation, infrastructure relocation, foundations, new public infrastructure required, exposition center construction and soft costs. Schedules of all costs appear in Appendix 3. Both the C Street and Northern Avenue sites were evaluated. For an exposition center developed on C Street, total development costs are approximately $437.9 million. For an exposition center developed on Northern Avenue, total development costs are substantially higher, approximately $555.6 million. The major part of the additional

cost at Northern Avenue is a result of more extensive public infrastructure improvements, in particular, the $75 million premium for the extension and relocation of the South Boston Transitway.

Exposition Center Debt Service

These figures can be used to estimate debt service. Under a public financing scenario, the source of capital would be state general obligation bonds. Assuming 100 percent bond financing, at an interest rate of 6.5 percent for 30 years, the annual debt service for the C Street site would be $35.6 million, for the Northern Avenue site $44.3 million.

Exposition Center Net Operating Results

Operating results are assumed to be the same for either the C Street or Northern Avenue or locations, equal to an annual deficit of $6.8 million after the exposition center reaches stabilization in the year 2010.

D. COST/BENEFIT ANALYSIS OF SITE SPECIFIC FACILITIES

The economic benefits associated with an exposition center were estimated previously. (These benefits were calculated without regard to site since it is doubtful that benefits associated with attendee economic activity would change very much between a C Street and a Northern Avenue location.)

The BRA contrasted annual operating costs (including debt service) and fiscal benefits for the two locations through the year 2025. Annual operating proformas are included in Appendix 4. It is important to note that while operating costs, revenues and tax revenues will rise with inflation, debt service is fixed at the time of financing by the interest rate set for construction bonds.

For a C Street exposition center, annual costs would total $42.4 million. For a Northern Avenue exposition center, annual costs would total $51.1 million.In the year 2010, at full occupancy the C Street exposition center produces a net benefit of $3.9 million. The Northern Avenue exposition center produces a net loss of $4.0 million by the year 2010. (See Appendix 4.) The economic analysis performed by the BRA concludes that the construction of a 550,000 square foot exposition center would generate substantial economic benefit for the Commonwealth over the long term on either the C Street or the Northern Avenue site. However, the cost/benefit analysis of the two sites clearly illustrates (see Fig 6) that the total

development cost has an impact on the economic performance of the facility through the first 25 years of operation. As a result of the development cost difference between the two sites being considered, a facility at C Street is expected to break even in the year 2009, three years earlier than the same facility sited at Northern Avenue.

FIGURE 6 ECONOMIC PERFORMANCE COMPARISON

CHAPTER 6

NEXT STEPS

This report is only a first step. Before a final decision can be made, several additional steps should be undertaken.

A. Evaluate the Proposed Exposition Center as Part of the Seaport

The BRA is undertaking a Seaport Study that will evaluate the needs of Boston's maritime industrial port. As part of that study, the BRA will analyze the implications of the development of a non-maritime industrial use in the Fort Point Channel area.

B. Conduct Technical Studies for C Street, Northern Avenue and South Bay Sites

It is clear from this preliminary study that further technical analyses of the C Street, Northern Avenue and South Bay sites are necessary before a final decision can be reached. Recommended largely on the basis of locational and site characteristics, these sites have other important characteristics that require technical or scientific analysis. Accordingly, the BRA recommends that the Commonwealth fund a full local traffic analysis, a geotechnical survey and soil contamination tests as soon as possible.

C. Evaluate Future of Existing Convention and Exhibition Facilities

The continued role of Boston's existing facilities -- the Hynes, the World Trade Center and Bayside, should be examined. While the BRA has made a preliminary judgment that a new facility should not have a negative impact on the Hynes, a finding also made by Price Waterhouse, the BRA has not conducted studies or made judgments about other facilities. The Commonwealth should include an economic analysis of these facilities, along with the land use, transportation and environmental studies called for above.

D. Establish a Development Review process

The importance of --- and the BRA's commitment to --- a public review process to evaluate a proposed exposition center cannot be overemphasized. The recommendations contained in this report must be discussed fully in the public arena. All views must be heard and the concerns of the people of Boston addressed. Particular attention should be paid to the concerns of the adjacent South Boston community.

The BRA will do everything possible to assure that this project will be evaluated pursuant to Boston's development review process. As part of this process, impacts will be measured and, where necessary, appropriate mitigation measures devised. It is anticipated that an exposition center may have impacts upon the city as a whole, as well as on the adjacent South Boston community. If so, Boston will call upon the Commonwealth to design appropriate mitigation measures that address both city-wide impacts as well as community specific impacts.

As part of the development review process, the BRA will also call upon the Commonwealth to provide benefits to both the City and to the immediately surrounding community that would offset in part the presence of this facility, which serves not only the City of Boston but the economy of the entire region.

The BRA intends to issue development guidelines to establish the design and development parameters of the new exposition center.

E. Evaluate the Infrastructure Costs of South Bay for Stadium Use

The Commonwealth should fund further studies to evaluate the potential of the South Bay site for a football stadium. Because of the traffic demands associated with a stadium, a massive infrastructure upgrade should be anticipated.

F. Study of Baseball Park Alternatives

Finally, the question of the future of Fenway Park has also been raised as part of an overall discussion of Boston's sports facilities. This is a complex issue that deserves a thorough study, which the BRA expects to undertake in 1995.

APPENDICES

Appendix 1: Attendance Estimates for Exposition Center
Appendix 2: Economic and Fiscal Impacts of Exposition Center
Appendix 3: Development Cost Comparison
Appendix 4: Cost/Benefit Analysis
Appendix 5: Hotel Demand Related to Major Exposition Center Events

Note: The purpose of the analyses presented in the Appendices is to estimate the attendance, occupancy, spending, employment, taxes and influence on the hotel market of the proposed Exposition Center. These estimates are not intended to represent goals or targets. Neither are they a "best case" that may not be surpassed, nor a "worst case" that guarantees a minimum performance level. The estimates presented here are intended to summarize the economic performance that a prudent investor might anticipate, based on a thorough and cautious examination of relevant data. These etimates point out the complexities of the exposition industry, and the importance of government and business cooperation and planning in determining the economic results. This is especially important for the establishment or recruiting of a permanent location professional association meetings and trade shows.

Appendix 1

Attendance Estimates For Boston's New Exposition Center

The issue of visitor attendance at Boston's new Exposition Center is central to both the determination of the optimal size of the facility and the estimation of the economic and fiscal benefits that will repay the public investment in construction cost and site opportunity cost. The first steps of this analysis are the identification of market segments among facility users and the determination of attendance and floor space relationships. These first steps involve the examination of national data on exposition events. The next steps are the identification of Boston's position in the national marketplace of exposition events and the estimation of actual attendance for relevant market segments. Once this has been done, the attendance estimates that result can serve as the starting point for the next analysis, estimating the economic and fiscal impacts of the exposition center, which is Appendix 2.

Market Segments

Exposition events are those meetings, conventions, demonstrations, trade shows and exhibits that require the short-term use of a very large enclosed space. The most important division across these varied events divides the market into two segments: consumer shows and trade shows, as explained in chapter 2 of the main report. Since consumer shows draw most of their attendance from the local metropolitan population, their economic impact is limited. They bring little new money into the regional economy from outside.

Trade shows and national meetings requiring significant exhibition space comprise the other major segment of exposition events. Many of these events are the annual meetings of professional or trade associations. Some are conventions that have evolved to include exhibits of the latest products or processes that are important to the profession or trade group that is meeting. In this sense, these conventions might properly be called trade shows. Admission to these events is limited to business and professional groups, whose members often travel from across the country to attend. Many attendees require hotel lodging, restaurant meals, and local stores and services during a stay that typically lasts three or four days. Even those attendees who live in the local metropolitan area may make some expenditures that represent net new economic stimulus to the state and regional economies. This is most likely to be the case when

the expenditures are treated as business, rather than personal, expenses. It is this net new spending, particularly at hotels, that makes these events economically important. They bring new money into the local economy. This is the market segment that the following analysis focuses on, and it will be simply referred to as trade shows from this point on.

Some exposition events move to a different city each year, or rotate, while others return to the same place each year, as fixed or permanent events, as described in Chapter 2. This distinction is important to the attendance analysis because Boston's capture of market share in the fixed segment may take more time than the rotating segment.

The National Market Of Tradeshow Events:

Most large exposition events in America are listed and described in the *1994 Tradeshow Week Databook*, which is the principal source of data in this section, unless otherwise noted.

The tradeshow industry has seen a trend of increasing use of exhibition space at large meetings as event planners incorporate more exhibitors and materials into their programs and respond to new space resources created by newly developed exhibition facilities. Still, there are few events that require facilities larger than half a million gross square feet.

The **Number of National Rotating Trade Shows by Gross Exhibition Size** is illustrated in the first graph in Appendix 1. The graph shows that there were 101 such events scheduled for 1994 that used between 100,000 and just under 200,000 gross square feet of exhibition space. These are events that would require all or almost all of the exhibition floor space available at the Hynes Veterans Memorial Convention Center, which has 193,000 square feet of total gross exhibition space. Even though the Hynes Center can accommodate shows of this size in theory, it is important to include, them in our analysis since Boston may be losing some business in this range due to the Hynes layout (only 111,000 square feet is contiguous) and tight schedule. One step above this are 42 shows using between 200,000 and 299,999 gross square feet, and above this are 30 shows at 300,000 to 399,999 square feet, followed by 20 more shows that need up to one half million square feet. After the 12 shows using 500,000 to just under 600,000 square feet (half of these 12 requiring just 500,000 to 510,000 square feet and the largest using only 560,000 gross square feet) the number of events drops to a low level and adds just 12 more events between 600,000 and over 1.9 million gross square feet of space.

The second graph, **Attendance and Space Utilization Rates**, measured by Attendance per Thousand Gross Square Feet, shows an important pattern across the range of space requirements. The number of persons attending these events, per thousand gross square feet of exhibition space, drops steadily from over 100 persons for floor space requirements between 100,000 and 199,999 square feet, through 20 for 400,000 to 499,999 square feet, to 12 for 700,000 to 799,999 square feet. Although the graph indicates a break in this pattern at around one million square feet, the more intensive space utilization rates seen here represent individual events, and not averages for several shows. Large shows that require very large halls sometimes owe their size to expansive exhibits rather than to high attendance. The largest trade show listed in the 1994 Tradeshow Week Databook is the California Farm Equipment Show and International Exposition.

Taken together, the patterns of declining numbers of events and declining space utilization for attendance across ever larger venues explain the result depicted in the graph titled, **National Demand for Exposition Space**, in Appendix 1, which measures total national rotating trade show attendance by gross exhibition size. The 101 trade shows using from 100,000 to 200,000 gross square feet of exhibition space have an average attendance to floor space ratio of 102 persons per 1,000 square feet, and represent a total of 654,450 attendees. The next step up in floor space requirements finds 429,200 persons attending national rotating trade shows utilizing from 200,000 to 300,000 square feet. Attendance continues to decline across the next three size levels, reaching 203,000 persons for trade shows needing from 500,000 to 600,000 square feet, and then dropping further and more steeply .

The fourth graph in Appendix 1 expresses these same figures in a different way to help us visualize the schedule by which an expanding exposition center can accommodate an increasingly large market of trade show attendees. **Attendance Growth from Facility Expansion illustrates** (graph 4) in the national market of rotating trade shows the cumulative growth in potential attendance for a exposition center that may be imagined to grow larger and larger by 100,000 gross square foot increments, beginning at just under 100,000 square feet. The first expansion, from 99,999 square feet to just short of 200,000 square feet, establishes the first point on the graph, marking the 654,450 persons expected to attend national rotating trade shows in this size range in 1994. The second expansion, up to 300,000 square feet, adds another 429,200 persons and brings the count of total potential attendees up to nearly 1.1 million persons. Cumulative potential attendance continues to rise steeply over the next two conceptual expansions, up to 500,000 square feet of gross exhibition space. Attendance increases

then decelerate somewhat up to the 600,000 square feet level, at which point nearly two million attendees have been added to the potential market available to an exposition center that is smaller than 100,000 square feet. Potential attendance growth then slows substantially beyond this level, rising by only another 179,000 over the next four size increments that bring the gross exposition space up to one million square feet.

This suggests that the range of 500,000 to 600,000 gross square feet of exhibition space may be an efficient size for Boston's new exposition center, especially if prime site opportunities are limited and development costs are expensive.

Rotating Vs. Permanent Shows:

While only 15 percent of the shows listed in Tradeshow Week Data Book relocate each year this number is a broad average that does not apply to the national trade shows that we are most concerned with. Almost all consumer shows are permanently located. They cannot rotate to different locations because they are designed to market products to a local population. This means that about 30 percent of trade shows rotate. True trade shows (admission restricted to members or professionals) number about half of Tradeshow Week Data Book listings.

Examining the listings for large shows in the 1994 Data Book reveals:

Gross Square Feet	Total Trade Shows	Rotating	Rotating %
200,000-380,000	143	73	51%
400,000-460,000	32	17	53%
470,000-600,000	45	18	40%
200,000-600,000	**220**	**108**	**49%**

Above 600,000 gross square feet only 9 out of 30 (30 percent) rotate.

The market realities that these figures reflect are:

A) Larger shows tend to be truly national, and as such must rotate to meet the desires of members/attendees for both convenience and travel.

B) The largest shows have trouble rotating because of the scarcity of adequate venues and problems of logistics.

C) Many smaller shows are local or regional and do not have as much member pressure to rotate.

Non-rotating trade shows are not necessarily permanently fixed in their current location.

A) A show with no essential link to its current venue may relocate in response to new options (such as a new Boston facility of adequate size and quality).

B) A show may transform through growth, sale, or member or management changes, which may be accompanied by a move to a new permanent location and perhaps a new name.

C) New shows are always being created or terminated, as well as transformed.

Conclusions

National trade shows are the sub-market of exposition events that bring significant economic benefits to the host city and region by providing new opportunities for the export of hospitality and related services to visitors who inject new money into the local economy. Rotating trade shows constitute the most accessible part of, this market but represent only half of all events in the size strata relevant to Bostons new exposition center. Estimates of attendance at economically significant shows should account for the inevitable and gradual evolution of large non-rotating trade shows in Boston's proposed new facility.

The Share And Size Of Boston's Trade Show Market:

The question of Bostons potential share of the national market of large rotating trade shows has been addressed by studies investigating the feasibility of a new exposition center. These studies by the firms Price Waterhouse and Coopers & Lybrand have been referred to in chapter 1 of this report: Applying market share results determined through a survey conducted by Coopers & Lybrand to the picture of the national market described above, the following analysis estimates likely attendance at large rotating trade shows in Boston. Similar, but more conservative, parameters for the extent and timing of penetration into the market of fixed location shows complete the analysis of the national trade show market for Boston. The results concur with the general conclusions of these two earlier studies: that a moderately large exposition

center in Boston could attract a significant number of new visitors to the city, and that the facility can attain an acceptably high occupancy rate.

Results:

Attendance estimates begin with rotating trade shows. After rotating trade show attendance has been established for the 1994 base year, market and attendance growth are factored in to arrive at estimates for the anticipated first full year of operations, the year 2000. Finally, Boston's market share of fixed location or non-rotating shows is established along with a schedule for the gradual establishment of this sub-market, and attendance at fixed location events is factored into the total.

Rotating Trade Shows:

1) Cumulative national attendance at (1994) *rotating* events using 200,000-599,999 g.s.f. (104 events) =	1,297,373
2) Times a factor representing Boston's market share of large rotating trade shows	x .085
3) Equals annual average attendance at 9 rotating events which Hynes is too small to host.	=110,277
4) Plus attendance at 2 additional shows that require between 100,000-200,000 g.s.f. (Hynes maximum capacity)	+ 12,960
5) Yields a total "1994" Boston attendance at rotating trade shows that require a facility larger than Hynes.	=123,237
6) Now allow for 6 years of 4% annually compounded growth	x 1.265
7) To arrive at estimated attendance at net new rotating trade shows at the proposed new exposition center for the operating year 2000.	=155,934

Notes about the estimation of rotating trade show attendance:

1) Although the data have been presented in terms of 100,000 square foot increments, actual events falling within this largest stratum of 500,000 to 599,999 g.s.f. did not exceed 560,000. Furthermore, the real limiting factor determining the adequacy of a facility to accommodate large trade shows is its *net s*quare footage. A well designed and configured hall may attain an efficiency factor greater than the standard 50% ratio of net to gross space. Consequently, an exposition space of 550,000 gross square feet can suffice for events that might otherwise require up to 600,000 g.s.f.

2) The survey of potential exposition center event representatives conducted by Coopers & Lybrand concluded that Massachusetts falls within the rotation region for events larger than 200,000 g.s.f. on an average four year cycle. This survey further concluded that Boston might capture 34% of those events cycling within this region. Dividing this 34% by the four year rotation cycle yields the .085 market share factor.

4) Additional attendance at events requiring Hynes' full capacity: Since Hynes has only 111,000 g.s.f. of contiguous space available, the possibility exists that the lower utility of non-contiguous space and the inability to double book full facility shows may pose an effective constraint that prevents Boston from realizing its full share of business in this size range. This does in fact appear to be the case. The Coopers & Lybrand user's survey referred to above indicated that shows requiring 50,001-100,000 n.s.f. (100,002-200,000 g.s.f.) observe a six year rotation to our region with a 35% preference for Boston within the region. This would indicate that Boston could host 35%/6 = 5.8% of the 101 rotating shows in this size category, or six shows. In fact, Boston was recorded as hosting only four such shows. We assume that an ample size new facility would allow for the capture of these two additional shows. Average attendance at these 101 shows in 1994 was 6,480 persons.

6) This 4% growth rate is more conservative than some other estimates but still greater than some other reference benchmarks. Price Waterhouse assumed a 6% annual growth in floor space demand, citing Tradeshow Week surveys that called for 5% growth annually in attendance and floor space demand for exposition events overall. Between 1984 and 1993 professional attendance at the Tradeshow 200's largest shows grew by an average 3.4% annually, as reported by Tradeshow Week. For one reference point outside of the tradeshow industry, the Bureau of Labor Statistics of the U.S. Department of Labor projects 1.6% annual growth

in national employment through the year 2005. If both the 4% growth in tradeshow attendance and the 1.6% growth in national employment hold true through the year 2010 when Boston's new exposition center reaches full capacity utilization, the ratio of tradeshow attendance to total employment will be 45% greater than it is today. This result does not seem unreasonable in view of the growing use of exhibition space for conventions and meetings, and the growth of tradeshow activities in response to the availability of newly developed space. If there is no growth in tradeshow attendance after the year 2010, the results of the present analysis will not be affected.

Fixed Location Or Non-rotating Trade Shows:

The other important segment of the national trade show market consists of fixed shows that will establish, relocate or grow into Boston.

Since this market will develop over time, as related in the section: "The National Market of Tradeshow Events" above, its simulation must allow for phased growth. The larger shows will need some time to plan and implement a Boston location, so we allow 15 years for this market to expand at a constant, non-compound rate. This 15 years will begin in 1995 with the announcement of exposition hall construction. By the year 2000, Boston will have gained one third (5 years/15 years) of its potential national market, adjusted for market growth.

While these estimates have adopted the 8.5% national market share for large rotating trade shows that Coopers and Lybrand derived from their user's survey, it would be prudent to estimate fixed shows more conservatively. After Boston and other cities complete current or planned expansions, Boston's new hall will be one of 18 able to provide at least 500,000 g.s.f. of exhibition space, and one of 42 with over 200,000 g.s.f. Boston's share of national attendance at non-rotating shows may also be hindered by our non-central geography, Frost-Belt location and high costs. Five percent seems reasonable, reflecting both the growing competition in the exposition center supply market and Boston's exceptional attractiveness to visitors.

The attendance characteristics of permanent shows are similar to those of rotating shows and many fixed shows evolve from rotating events. Their estimated attendance may be calculated by reference to the results for rotating shows outlined above.

The national market of fixed shows is slightly greater than that of rotating shows (51% compared to 49%) 51 / 49 = 1.04

Boston's market share, 15 years after the announcement of project plans will be 5%, compared to an 8.5% share of rotating events. x 5 / 8.5

Combining these two factors, we get the attendance ratio for permanent shows/rotating shows =61%

Multiplying growth-adjusted year 2000 attendance at rotating shows by this factor x 155,934

Results in year 2000 attendance at Boston's full "equilibrium share" of national fixed shows. = 95,120

But by year 2000 Boston is just one third through the 15 year maturity that began in 1995 x 1/3

So that Boston's year 2000 attendance at non-rotating trade shows will be = 31,707

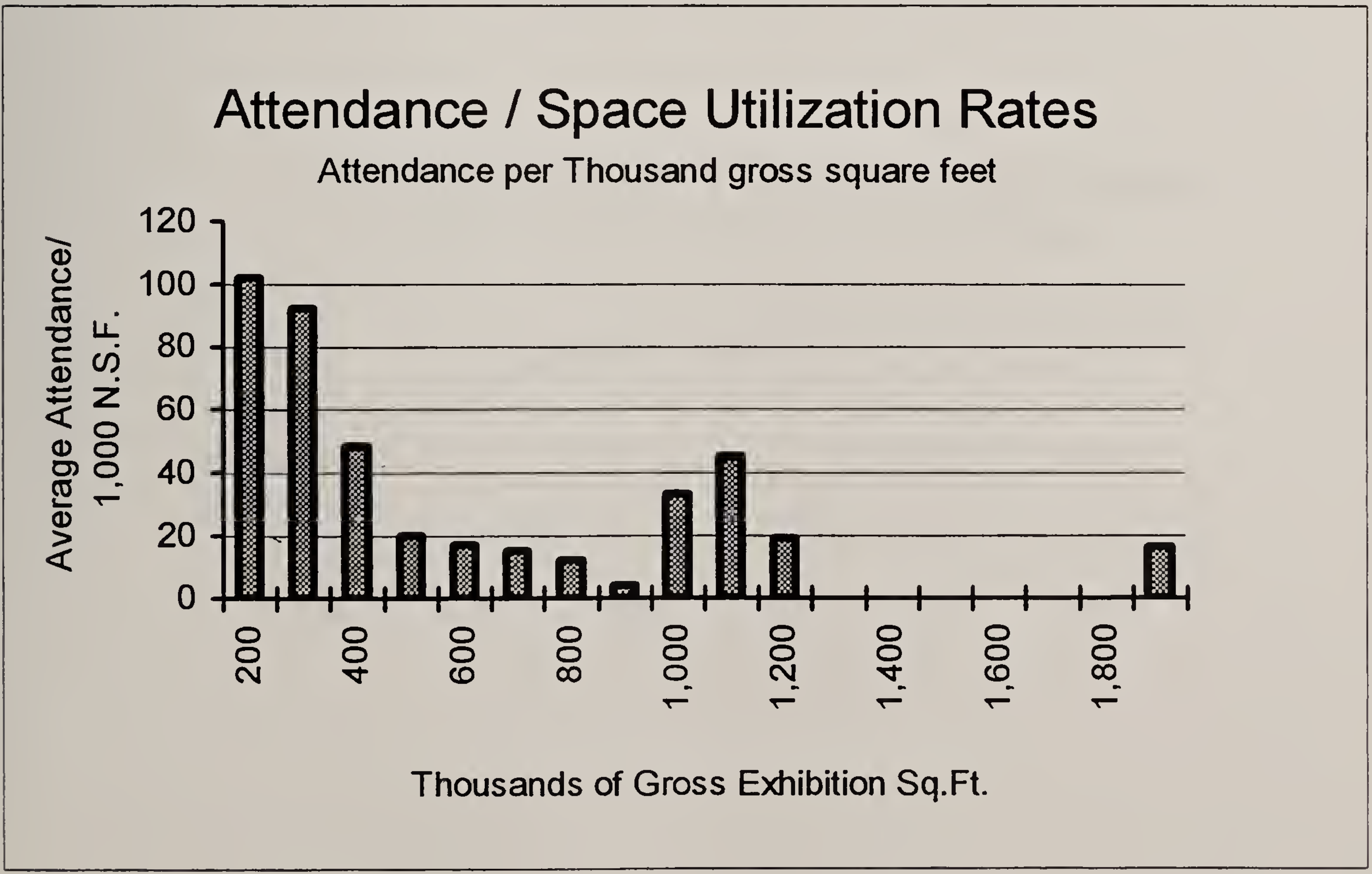
TOTAL ATTENDANCE:

	Rotating	Permanent	TOTAL
Year 2000:	155,934	31,707	187,641
Year 2005	189,718	77,152	266,870
Year 2010	230,820	140,800	371,621

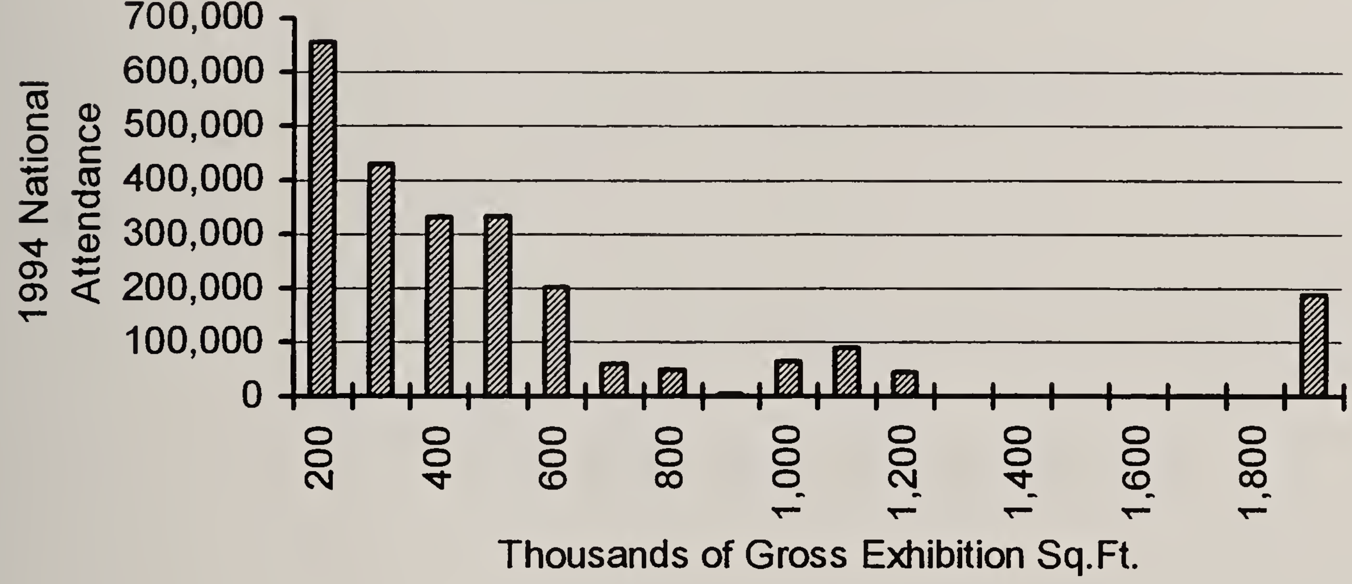
Total potential attendance during the year 2000 at net new national trade shows that might take place in Boston's new exposition center is depicted in the last graph in Appendix 1, **Boston Exposition Attendance.**


National Rotating Trade Shows

Number of Shows by Gross Exhibition Size

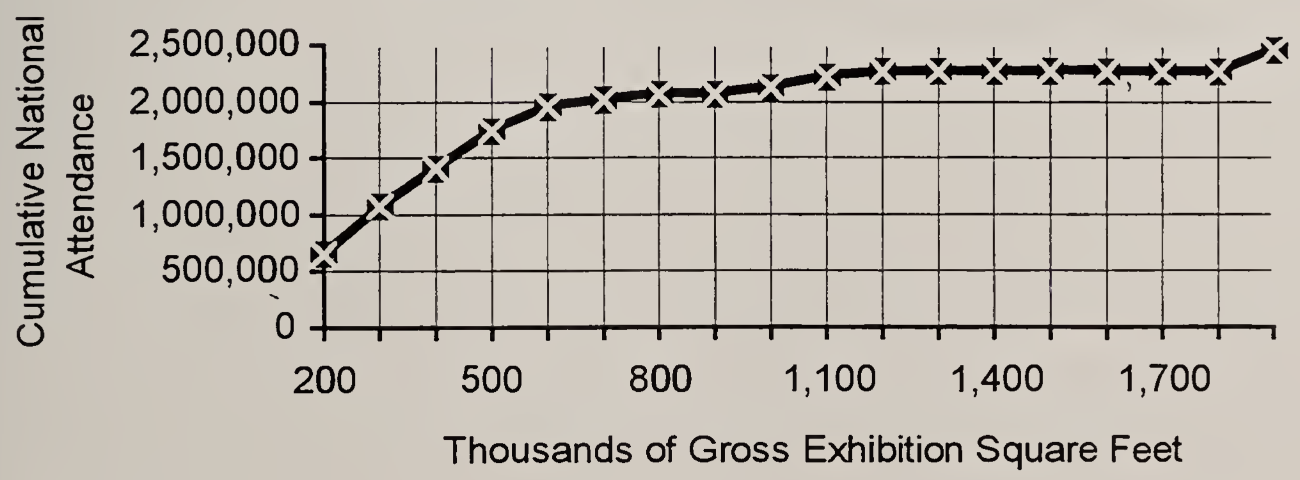

Attendance / Space Utilization Rates

Attendance per Thousand gross square feet



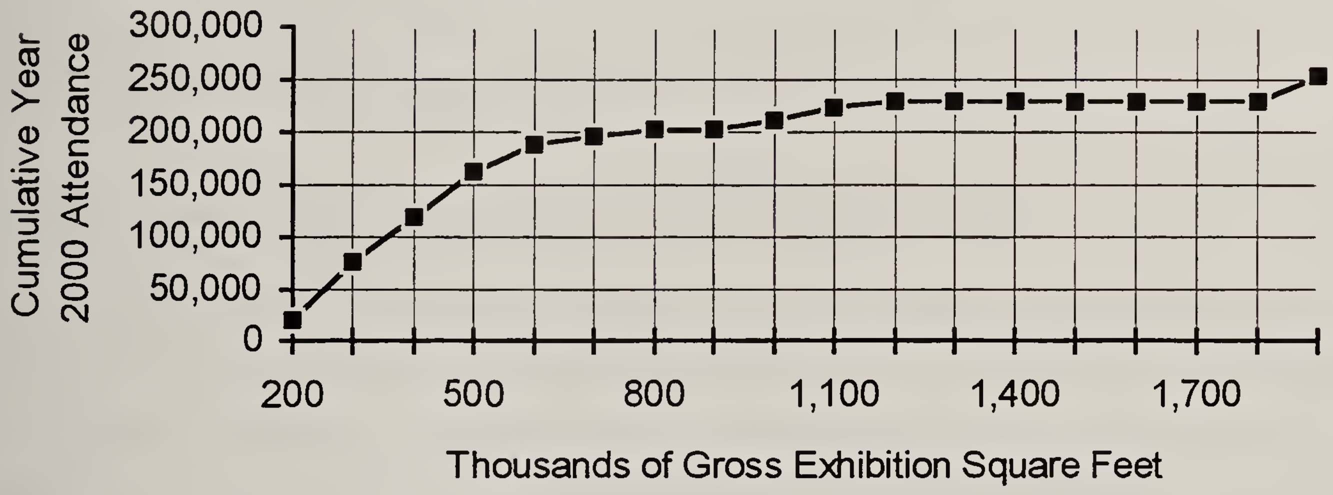
National Demand for Exposition Space

Attendance by Gross Exhibition Space



National Demand For Exposition Space

Attendance Growth from Facility Exposition



Boston Exposition Attendance

Additional Visitors to New Facility

Appendix 2

Economic And Fiscal Impacts Of A New Exposition Center: Construction Period, Year 2000 And Year 2010

Economic And Fiscal Impacts Of The Operation Of Boston's New Exposition Center:

Exposition and convention centers are widely regarded as economic engines that bring new money into local economies by increasing the export of hotel and visitor services to delegates and attendees to national and regional events. As with most economic stimuli that inject new money from outside of the local economy, the spending by visiting attendees is believed to have a multiplier effect as new local wages and business receipts are respent on both business and consumer goods and services. This total new income, spending and business generates new state and local taxes, so that the public investment in construction, operation and site opportunity cost may be repaid. The tables that follow explore these issues for the proposed new Boston exposition center.

The first question in estimating the economic and fiscal impacts of exposition center operations is: "If you build it, who will come?" This was the topic of Appendix 1. The next issue is the amount and type of spending that can be expected from these visitors. In order to have a positive economic effect, this spending must be made with net new money that would not have been spent without the exposition center. For this reason, the attendance estimates focused on out-of-town visitors who would not have been in Boston to patronize hotels and buy other local services and goods were it not for the event being staged at the exposition center. Local residents who might attend consumer shows were not included in the attendance analysis because of the presumption that any spending that they do in conjunction with exposition events will be offset by reductions in other local expenditures. Local residents spending will not be "net new", but will be redirected from other local purchases.

The table: **Economic Impact of Boston's Exposition Center with 187,641 Delegates in Year 2000** shows the projected spending by national trade show attendees during the center's first full year of operation. The figures in the top section of the table show the distribution

and amount of total spending by each out-of-town visitor to a national trade show who spends the average 3.2 nights in a Boston hotel. The average delegate staying in a hotel will spend $728 during his or her stay. The total delegate spending column sums the spending of all those 70% of attendees who are presumed to come from out of the metropolitan area and stay in a local hotel. In addition, this total delegate spending column includes the amounts that would be spent by half of that 30% of attendees who do not stay at a hotel, but nonetheless make all other expenditures listed. Since these local attendees are professional or trade people making business expenditures, their spending here will not necessarily be offset with reduced personal spending elsewhere in the local economy, and this spending will count as net new.

The bottom of this Economic Impact table calculates the taxes that will be collected as this spending takes place. Most dollar figures are shown in constant dollars at 1994 prices; they are not adjusted to account for anticipated future inflation. Calculated tax receipts are presented in both constant dollar and current dollar (inflated) terms, since the actual dollar amounts are relevant to budget matters such as construction bond repayment. Inflation is assumed to average 3% annually through the year 2000. A similar table presents these same results calculated for the year 2010, when exposition center occupancy and attendance are projected to reach capacity. Since most of this table is also expressed in 1994 constant dollars, these two tables differ only because of the greater number of visitors in 2010 and, of course, the inflated tax receipts have been subject to a longer period of inflation. Inflation is assumed to average 5% per year after the year 2000, which is close to the long term national average.

These Economic Impact tables also incorporate the effects of the local multiplier in estimating total economic output and indirect tax revenues. Direct tax revenues are those collected at the time that the exposition visitor makes his or her purchase, and this money is from among those net new dollars that the attendee has brought to this event. Indirect tax revenues include the income and sales taxes that hotel workers and others serving or doing business with these visitors pay from their paychecks, which in turn come indirectly from this same attendee spending. Indirect taxes also include higher corporate tax collections as corporations enjoying this new delegate business make higher profits and pay higher taxes on these earnings. Additionally, indirect taxes contain the sales, income and business taxes that result as wages and business receipts are spent and respent in the local economy. For example, hotels will purchase more contract services and supplies in the course of hosting their additional guests. Hotel workers will spend much of their paycheck locally, providing income to local stores and

craftspeople. The multipliers used for these calculations are published by the U.S. Department of Commerce, and they describe the effects of responding within the Commonwealth of Massachusetts. The tables **Estimating Total Economic Impact Using Regional Multipliers** describe this process in detail.

The construction of the exposition center itself will also provide jobs and income to area construction workers, architects, engineers, etc., and the spending and respending of their earnings will also generate a multiplier effect. Similarly, the construction of new hotels built in response to new tradeshow guests will boost construction jobs and earnings. Also, additional state tax revenues will follow these earnings. The remaining tables in this appendix describe these economic and fiscal benefits of construction.

Employment and Fiscal Benefits Generated by the Construction of Exposition Center

Construction Costs ($000s at 1994 prices):		
Convention Center	$271,809,500	Exposition Center and Parking
at C Street Site	$43,930,100	Foundation
	$2,150,000	Infrastructure: New and Relocations
Total Hard Costs	$317,889,600	
Soft Costs (business/professional services)	$51,857,900	
Acquisition, business relocation, contingency	$68,221,500	
Total Development Cost	$437,969,000	
Construction Jobs and wages		
Payroll ($000s):	$79,472,400	25% of hard costs
Jobs	2,271	full-time-equivalent, year-long, averaging $35,000
Massachusetts State Taxes:		
Construction materials	$0	5 % tax on materials does not apply to public projects
Construction Worker payroll	$3,830,172	5.95 % tax on 81% of payroll (Mass. Dept. Revenue, Statistics of Income)
Worker spending sales tax	$909,959	5 % sales tax on the 22.9 % of worker income spent on taxable items (U.S. Dept. of Labor, B.L.S., Boston Metro Consumer Expenditure Survey)
Corporate Tax	$898,038	Mass. corporate tax revenues average 1.13 % of earned income annually
Total Direct State Taxes from "Hard Costs"	$5,638,169	
Direct plus Indirect Employment, Earnings and Taxes:		
Related to Hard Construction Costs:		
Total Impact employment	7,397	Full time and part time jobs, including direct construction jobs
Total Impact earnings	$220,742,538	Includes construction workers, suplier companies, and those they support through their spending (average earnings $29,843)
Related to "Soft Cost" Business Services:		
Total Impact employment	1,461	75% of "Soft Costs" are assumed to be locally produced business and professional services, creating both direct and indirect jobs, earnings and taxes
Total Impact earnings	$34,521,804	
Total Impact:		
Income Tax	$12,302,465	Taxes calculated as above, all Economic Multipliers are from the U.S. Dept. Commerce "RIMS II" Handbook, second edition
Sales Tax	$2,922,777	
Corporate Tax	$2,884,487	The employment multiplier has been adjusted from $1989 - $1994 using the U.S. implicit price deflator for fixed weight G.D.P. (.8618)
Total Direct and Indirect State Taxes	**$18,109,729**	One time, over the four year construction period

Source Boston Redevelopment Authority Research Department

Economic Impact of Boston's New Exposition Center with 187,641 Delegates in Year 2000

All amounts in Constant Dollars at 1994 price levels unless otherwise noted.

Spending

Spending Category	Percent Share	Per Visitor	Year 2000 Total Delegate Spending
Hotel Room Lodging	51.0%	$371.55	$48,802,872
Hotel Restaurants	11.0%	$80.14	$12,781,705
Other Restaurants	11.4%	$83.05	$13,246,494
Hospitality Suites	5.2%	$37.88	$6,042,260
Entertainment	5.0%	$36.43	$5,809,866
Retail Stores *	8.2%	$59.74	$9,528,180
Local Transportation	4.3%	$31.33	$4,996,485
Other	3.9%	$28.41	$4,531,695
Total Direct Spending	100.0%	$728.53	$105,739,556
Multiplier			1.9631
Total Direct and Indirect Economic Output			**$193,553,312**

Spending Category			**Taxes**	
		Tax Rate	1994 Dollars	*2000 Dollars* **
Hotel Room Lodging	State	5.7%	$2,781,764	*$3,321,571*
	Local	4.0%	$1,952,115	*$2,330,927*
Hotel Restaurants		5.0%	$639,085	*$763,101*
Other Restaurants		5.0%	$662,325	*$790,850*
Hospitality Suites	State	5.7%	$344,409	*$411,242*
	Local	4.0%	$241,690	*$288,591*
Entertainment ***		0.0%	$0	*$0*
Retail Stores		5.0%	$476,409	*$568,857*
Local Transportation ***		0.0%	$0	*$0*
Total Direct Tax Revenue	Total		**$7,097,797**	***$8,475,141***
	State		$4,903,991	*$5,855,622*
	City		$2,193,805	*$2,619,518*
Indirect Taxes				
Income Tax			$2,921,826	*$3,488,814*
Corporate Tax			$685,064	*$818,002*
Sales Tax			$694,157	*$828,860*
Total Direct and Indirect Tax Revenue			**$11,398,844**	***$13,610,816***

Sources:

Percent spending for out-of-town visitors is based upon a survey by the International Association of Convention & Visitors Bureaus.

Visitor spending is estimated by the Boston Redevelopment Authority using this percent spending and a daily hotel rate of $116.11.

Number of attendees is based on 13 events with an average crowd of 14,440.

Out-of-town visitors are assumed to be 70 % of the total and stay an average of 3.2 nights at hotels, making all expenditures shown.

An additional 15 percent of all visitors make all non-lodging expenditures, which are also net increments to the state economy.

See the table: "ESTIMATING TOTAL ECONOMIC IMPACTS USING REGIONAL MULTIPLIERS" for notes on the multiplier and the estimation of "Indirect Taxes".

* Only the 25% of retail sales volume that is "margin" enters into the multiplier effect. The wholesale cost of goods is excluded.

**Tax yields inflated to year 2000 level assuming six years of 3% annual inflation (19.4%).

*** Not taxed

Economic Impact of Boston's New Exposition Center with 371,621 Delegates in Year 2010

All amounts in Constant Dollars at 1994 price levels unless otherwise noted.

Spending Category	Percent Share	Per Visitor	**Spending** Year 2010 Total Delegate Spending
Hotel Room Lodging	51.0%	$371.55	$96,653,568
Hotel Restaurants	11.0%	$80.14	$25,314,030
Other Restaurants	11.4%	$83.05	$26,234,540
Hospitality Suites	5.2%	$37.88	$11,966,632
Entertainment	5.0%	$36.43	$11,506,377
Retail Stores *	8.2%	$59.74	$18,870,459
Local Transportation	4.3%	$31.33	$9,895,484
Other	3.9%	$28.41	$8,974,974
Total Direct Spending	100.0%	$728.53	$209,416,064
Multiplier			1.9631
Total Direct and Indirect Economic Output			**$383,330,272**

Spending Category		Tax Rate	**Taxes** 1994 Dollars	*2010 Dollars ***
Hotel Room Lodging	State	5.7%	$5,509,253	*$10,715,417*
	Local	4.0%	$3,866,143	*$7,519,591*
Hotel Restaurants		5.0%	$1,265,701	*$2,461,771*
Other Restaurants		5.0%	$1,311,727	*$2,551,290*
Hospitality Suites	State	5.7%	$682,098	*$1,326,671*
	Local	4.0%	$478,665	*$930,997*
Entertainment***		0.0%	$0	*$0*
Retail Stores		5.0%	$943,523	*$1,835,138*
Local Transportation***		0.0%	$0	*$0*
Total Direct Tax Revenue	Total		**$14,057,111**	*$27,340,875*
	State		$9,712,303	*$18,890,287*
	City		$4,344,808	*$8,450,588*
Indirect Taxes				
Income Tax			$5,786,646	*$11,254,942*
Corporate Tax			$1,356,761	*$2,638,880*
Sales Tax			$1,374,771	*$2,673,910*
Total Direct and Indirect Tax Revenue			**$22,575,289**	*$43,908,607*

Sources:

Percent spending for out-of-town visitors is based upon a survey by the International Association of Convention & Visitors Bureaus.

Visitor spending is estimated by the Boston Redevelopment Authority using this percent spending and a daily hotel rate of $116.11.

Number of attendees is based on 25 events with an average crowd of 14,865.

Out-of-town visitors are assumed to be 70 % of the total and stay an average of 3.2 nights at hotels, making all expenditures shown.

An additional 15 percent of all visitors make all non-lodging expenditures, which are also net increments to the state economy.

See the table: "ESTIMATING TOTAL ECONOMIC IMPACTS USING REGIONAL MULTIPLIERS" for notes on the multiplier and the estimation of "Indirect Taxes".

* Only the 25% of retail sales volume that is "margin" enters into the multiplier effect. The wholesale cost of goods is excluded.

***Tax yields inflated to year 2010 level assuming six years of 3% annual inflation 1994-2000 and then 5% annually to 2000 (94.5%)*

*** Not taxed

ESTIMATING TOTAL ECONOMIC IMPACTS USING REGIONAL MULTIPLIERS FOR YEAR 2000

Annual Off-Site Business Attributable to the Boston's New Exposition Center

		Initial Impact	Multipliers			Total Impact on Full Economy by Sector of Origin		
		Year 2000			1994			
Spending Category	Percent Share	187,641 Delegates Spending	Output Mult.	Earnings Mult.	Employment Mult.	Total Output	Total Earnings	Total Employment
Hotel Room Lodging	0.510	$48,802,872	1.9709	0.5970	29.5597	$96,185,581	$29,135,315	1,443
Hotel Restaurants	0.110	$12,781,705	1.9198	0.5809	32.9208	$24,538,317	$7,424,892	421
Other Restaurants	0.114	$13,246,494	1.9198	0.5809	32.9208	$25,430,619	$7,694,888	436
Hospitality Suites	0.052	$6,042,260	1.9709	0.5970	29.5597	$11,908,691	$3,607,229	179
Entertainment	0.050	$5,809,866	1.9709	0.5970	29.5597	$11,450,664	$3,468,490	172
Retail Stores*	0.082	$9,528,180 *	2.0819	0.8088	36.9712	$4,959,179	$1,926,598	88
Local Transportation	0.043	$4,996,485	1.9510	0.7573	26.3711	$9,748,141	$3,783,838	132
Other	0.039	$4,531,695	2.0593	0.7900	39.6428	$9,332,120	$3,580,039	180
Total Direct Spending	1.000	$105,739,556						
Total Direct Economic Output*		$98,593,422 *						
Composite Multiplier **			1.9631	0.6149	30.9280			
Total Direct and Indirect Economic Impact						$193,553,312	$60,621,289	3,049

NOTE: Initial Impact Spending refers to hotel and other off-site spending by the 70% of attendees making all expendituresand the 15% of attendees making only non-lodging expenditures, all incremental net gains to the state economy. Operations of the Exposition Center itself are not included.

* Only the 25% of retail sales representing "margin" enters into the multipliers as "Direct Output". The wholesale cost of goods, trucking, etc. are "leakages from the system" that do not generate a local multiplier effect.

**"Composite Multipliers" are derived by dividing Total Impacts for each column by Direct Output.

All multipliers are Total Multipliers, by Industry Aggregation, for Output, Earnings and Employment, for the state of Massachusetts. (REGIONAL MULTIPLIERS: A User Handbook for the Regional Input Output Modeling System (RIMS II), Second Edition, U.S. Dept. of Commerce, May 1992.) The RIMS II Employment multiplier is expressed in terms of 1989 constant dollars in the 1992 Handbook. The employment multipliers shown on this table have been adjusted to 1994 price terms using the 1989-1994 U.S. fixed weight GDP deflator of 0.8618.

None of these multipliers will directly show the relationship between initial impact and total impact TAXES. However, the Earnings Multiplier does provide a key to total taxes collected after all initial, indirect, and induced effects have been realized. State income taxes produced by total earnings will be equal to the portion of earnings that is taxable after all exemptions and deductions (81% of gross income, on average, according to the Mass. Dept. of Revenue) times the personal income tax rate of 5.95%. Sales taxes paid out of earnings spent will be the 5% Mass. sales tax rate times the portion of earnings spent on taxable goods (22.9% of household income, as seen in the U.S. Bureau of Labor Statistics Consumer Expenditure Survey). Massachusetts state corporate revenues have averaged 1.13% of earned income over the long run.

ESTIMATING TOTAL ECONOMIC IMPACTS USING REGIONAL MULTIPLIERS for YEAR 2010

Annual Business Attributable to the Boston's NewExposition Center (1994 Constant Dollars)

			Multipliers			Total Impact on Full Economy		
		Year 2010			1994	by Sector of Origin		
Spending Category	Percent Share	371,621 Delegates Spending	Output Mult.	Earnings Mult.	Employment Mult.	Total Output	Total Earnings	Total Employment
Hotel Room Lodging	0.510	$96,653,568	1.9709	0.5970	29.5597	$190,494,517	$57,702,180	2,857
Hotel Restaurants	0.110	$25,314,030	1.9198	0.5809	32.9208	$48,597,874	$14,704,920	833
Other Restaurants	0.114	$26,234,540	1.9198	0.5809	32.9208	$50,365,070	$15,239,644	864
Hospitality Suites	0.052	$11,966,632	1.9709	0.5970	29.5597	$23,585,035	$7,144,079	354
Entertainment	0.050	$11,506,377	1.9709	0.5970	29.5597	$22,677,919	$6,869,307	340
Retail Stores*	0.082	$18,870,459 *	2.0819	0.8088	36.9712	$9,821,602	$3,815,607	174
Local Transportation	0.043	$9,895,484	1.9510	0.7573	26.3711	$19,306,090	$7,493,850	261
Other	0.039	$8,974,974	2.0593	0.7900	39.6428	$18,482,164	$7,090,230	356
Total Direct Spending	1.000	$209,416,064						
Total Direct Economic Output*		$195,263,220 *						
Composite Multiplier **			1.9631	0.6149	30.9280			
Total Direct and Indirect Economic Impact						$383,330,272	$120,059,817	6,039

NOTE: Initial Impact Spending refers to hotel and other off-site spending by the 70% of attendees making all expenditures and the 15% of attendees making only non-lodging expenditures, all incremental net gains to the state economy. Operations of the Exposition Center itself are not included.

* Only the 25% of Retail sales representing "margin" enters into the multipliers as "Direct Output". The wholesale cost of goods, trucking, etc. are "leakages from the system" that donot generate a local multiplier effect.

**"Composite Multipliers" are derived by dividing Total Impacts for each column by Direct Output.

All multipliers are Total Multipliers, by Industry Aggregation, for Output, Earnings, and Employment, for the state of Massachusetts. (REGIONAL MULTIPLIERS: A User Handbook for the Regional Input-Output Modeling System (RIMS II), Second Edition, U.S. Dept. of Commerce, May 1992.) The RIMS II Employment multiplier is expressed in terms of 1989 constant dollars in the 1992 Handbook. The employment multipliers shown on this table have been adjusted to 1994 price terms using the 1989-1994 U.S. fixed weight GDP deflator of 0.8618.

None of these multipliers will directly show the relationship between initial impact and total impact TAXES. However, the Earnings Multiplier does provide a key to total taxes collected after all initial, indirect, and induced effects have been realized. State income taxes produced by total earnings will be equal to the portion of earnings that is taxable after all exemptions and deductions (81% of gross income, on average, according to the Mass. Dept. of Revenue) times the personal income tax rate of 5.95%. Sales taxes paid out of earnings spent will be the 5% Mass. sales tax rate times the portion of earnings spent on taxable goods (22.9% of household income, as seen in theU.S. Bureau of Labor Statistics Consumer Expenditure Survey). Massachusetts state corporate revenues have averaged 1.13% of earned income over the long run.

BOSTON EXPOSITION CENTER ANNUAL PERFORMANCE and OFF-SITE TAX GENERATION

	ATTENDANCE			OCCUPANCY		TAXES	
Year	Rotating	Fixed	TOTAL	Occ.Sq.Ft.Days	Rate	1994	Inflated
2000	155,934	31,707	187,641	46,450,000	26%	$11,398,844	$13,610,816
2001	162,171	39,570	201,742	49,940,588	28%	$12,255,435	$15,365,312
2002	168,658	48,012	216,670	53,636,102	30%	$13,162,316	$17,327,434
2003	175,405	57,066	232,470	57,547,353	33%	$14,122,138	$19,520,534
2004	182,421	66,767	249,188	61,685,686	35%	$15,137,686	$21,970,505
2005	189,718	77,153	266,870	66,063,010	38%	$16,211,882	$24,706,049
2006	197,306	88,263	285,569	70,691,822	40%	$17,347,795	$27,758,974
2007	205,199	100,138	305,337	75,585,239	43%	$18,548,640	$31,164,526
2008	213,406	112,822	326,229	80,757,023	46%	$19,817,798	$34,961,747
2009	221,943	126,361	348,304	86,221,612	49%	$21,158,810	$39,193,881
2010	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$43,908,575
2011	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$46,104,004
2012	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$48,409,204
2013	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$50,829,664
2014	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$53,371,147
2015	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$56,039,704
2016	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$58,841,690
2017	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$61,783,774
2018	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$64,872,963
2019	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$68,116,611
2020	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$71,522,442
2021	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$75,098,564
2022	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$78,853,492
2023	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$82,796,166
2024	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$86,935,975
2025	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$91,282,774
2026	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$95,846,912
2027	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$100,639,258
2028	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$105,671,221
2029	230,820	140,802	371,621	91,993,663	52%	$22,575,273	$110,954,782
TOTAL	5,334,466	2,859,894	8,194,330			$497,790,431	$1,697,458,697

NOTE: Occupancy includes major national/regional trade shows only, both rotating and fixed location.
Consumer shows attended by local residents are not included in these figures.
Occupancy rates are calculated against the standard of a 320 day full occupancy year.
Inflation is assumed to average 3%/yr. From 1994-2000 and 5% thereafter.

The Economic and Fiscal Impacts of Construction of 3,259 New Hotel Rooms

Number of New Hotel Rooms to be Constructed:	3,259	
Hard Construction Cost @ $70,000/Room:	$228,130,000	
Total Development Cost @ $100,000/Room:	$325,900,000	Exclusive of site value or land costs
Construction Employment, Earnings and Taxes:		
Construction jobs & wages		
Payroll ($000s):	$57,032,500	25 % of hard costs
Jobs	1,630	full-time-equivalent, year-long, averaging $35,000
Massachusetts State Taxes:		
Construction materials	$2,851,625	5 % tax on materials costing 25 percent of hard costs
Construction Worker payroll	$2,748,681	5.95 % tax on 81 percent of payroll (Mass. Dept. Revenue, Statistics of Income)
Worker spending sales tax	$653,022	5 % sales tax on the 22.9 p% of worker income spent on taxable items (U.S. Dept. of Labor, B.L.S., Boston Metro Consumer Expenditure Survey)
Corporate Tax	$644,467	Mass. corporate tax revenues average 1.13 % of earned income annually
Total Direct State Taxes from "Hard Costs"	$6,897,796	
Indirect Employment, Earnings and Taxes from "Hard Costs":		
Total Impact employment	5,308	Full time and part time jobs, including direct construction jobs
Total Impact earnings	$158,413,472	Includes construction workers and those supported by their wages, and by construction firm suppliers (average earnings $29,843).
Related to "Soft Cost" Business Services:		
Total Impact employment	1,378	50% of "Soft Costs" are assumed to be locally produced business and professional
Total Impact earnings	$43,390,326	services, creating both direct and indirect jobs, earnings and taxes (earnings average $31,497 per job)
Total Economic Impact:		
Income Tax	$9,725,934	Taxes calculated as above, all Economic Multipliers are from the
Sales Tax	$2,310,653	U.S. Dept. Commerce "RIMS II" Handbook, second edition.
Corporate Tax	$2,280,383	The employment multiplier has been adjusted from $1989 to $1994
plus Construction Materials sales tax	$2,851,625	using the U.S. implicit price deflator for fixed weight G.D.P.1989-1994 (0.8618)
Total Direct and Indirect States Taxes	**$17,168,595**	One time, over the construction period

Source Boston Redevelopment Authority Research Department

The Economic and Fiscal Impacts of Construction of 1,646 New Hotel Rooms

Number of New Hotel Rooms to be Constructed:	1,646	
Hard Construction Cost @ $70,000/Room:	$115,220,000	
Total Development Cost @ $100,000/Room:	$164,600,000	Exclusive of site value or land costs.
Construction Employment, Earnings and Taxes:		
Construction jobs & wages		
Payroll ($000s):	$28,805,000	25 %of hard costs
Jobs	823	full-time-equivalent, year-long, averaging $35,000
Massachusetts State Taxes:		
Construction materials	$1,440,250	5 % tax on materials costing 25 percent of hard costs
Construction Worker payroll	$1,388,257	5.95 percent tax on 81 percent of payroll (Mass. Dept. Revenue, Statistics of Income)
Worker spending sales tax	$329,817	5 % sales tax on the 22.9 % of worker income spent on taxable items (U.S. Dept. of Labor, B.L.S., Boston Metro Consumer Expenditure Survey)
Corporate Tax	$325,497	Mass. corporate tax revenues average 1.13 % of earned income annually
Total Direct State Taxes from "Hard Costs"	$3,483,821	
Indirect Employment, Earnings and Taxes from "Hard Costs":		
Total Impact employment	2,681	Full time and part time jobs, including direct construction jobs
Total Impact earnings	$80,008,768	Includes construction workers and those supported by their wages, and by construction firm suppliers (average earnings $29,843)
Related to "Soft Cost" Business Services:		
Total Impact employment	696	50% of "Soft Costs" are assumed to be locally produced business and professional
Total Impact earnings	$21,914,844	services, creating both direct and indirect jobs, earnings, and taxes. Earnings average $31,497 per job.
Total Economic Impact:		
Income Tax	$4,912,208	Taxes calculated as above, all Economic Multipliers are from the
Sales Tax	$1,167,025	U.S. Dept. Commerce "RIMS II" Handbook, second edition.
Corporate Tax	$1,151,737	The employment multiplier has been adjusted from $1989 to $1994
plus Construction Materials Sales Tax	$1,440,250	using the U.S. implicit price deflator for fixed weight G.D.P.1989-1994 (0.8618)
Total Direct and Indirect StatesTaxes	**$8,671,221**	One time, over the construction period.

Source Boston Redevelopment Authority Research Department

Appendix 3

Development Cost Comparison of the C Street and Northern Avenue Sites

There is a substantial difference in the total development cost of an exposition center constructed on C Street and one constructed on Northern Avenue. In both cases, costs are based on the construction of a facility with a total of 1.44 million square feet containing exhibition space of 550,000 square feet. For an exposition facility of this size, the total development cost at C Street is $437.9 million; the total development cost at Northern Avenue is $555.6 million. The difference is $117.7 million. (See Tables 1 and 2.)

Infrastructure Costs

A large part of the cost difference, over $77 million, is attributable to the need to provide new infrastructure as well as to relocate existing infrastructure at the Northern Avenue site. For example, about $75 million has been allocated for the extension of the South Boston Transitway from the World Trade Center to the end of Northern Avenue. While this extension is not absolutely esstential, it would greatly improve transit access to the new exposition center as well as to the Boston Marine Industrial Park and the area in general. Moreover, the extension could include a underground turnaround at the terminus to accommodate a future upgrade of the bus transitway to light rail. Even if the Transitway were not extended, it would nonetheless have to be partially relocated at a substantial cost if the Northern Avenue site was developed for the exposition center. In general, the infrastructure issues involved at Northern Avenue are more complex than at C Street because both the Haul Road and the Third Third Harbor Tunnel cut through the former. The adjacency to the tunnel may present many complications and hidden costs.

Foundation and Hard Costs

There are significant foundation costs at both sites. While the soil condition is poor throughout the Fort Point Channel District, there is substantial geological difference between the sites that requires different strategies for the foundation, causing an impact on the overall cost of construction.

At C Street, the vertical distance from the surface to structurally sound geological material is approximately 40 feet. Excavation to this level would eliminate the need for piles and also provide underground parking beneath the entire footprint of the facility. The main cost will be in the treatment and removal of all the excavated fill and clay material and the construction of perimeter walls. The result of this excavation is a foundation for the building and underground parking for 3,000 spaces, at a cost of $43 million.

The depth of fill and clay at Northern Avenue, which is much greater than at C Street, will require 150 foot deep piles to anchor the foundation to bedrock . The smaller building footprint and the presence of the Third Harbor Tunnel limits excavation, thus accommodating only 1,918 spaces underground. An additional 1,082 spaces would have to be provided in a separate, on-site garage south of the Haul Road.

The cost of excavation at C Street is nearly the same as the cost of the piles at Northern Avenue, thus balancing out. However, the cost of the additional parking garage to provide the balance of the necessary 3,000 spaces at Northern Avenue will add an additional $21 million to overall construction cost.

Economic and Fiscal Impacts, and Opportunity Costs

Tables 1 and 2 summarize the actual additional cost to develop the project, but does not tabulate the negative economic and fiscal impacts in the event the current uses on the two sites have to be displaced. C Street generates more in property taxes because of the high percentage of privately-owned parcels, but has very little other impact on city revenue. Even though Northern Avenue generates only about 45% as much in property tax, it includes major city-owned buildings within the Boston Marine Industrial Park that generate substantial income.

Although relocation costs represent a small monetary cost of the entire project, the hardship experienced by affected businesses and the potential loss of jobs must also be considered. While 14 businesses with approximately 284 employees would be relocated from C Street, the Northern Avenue site would involve the displacement of 39 businesses with approximately 852 employees.

SUMMARY OF PROJECT COSTS

TABLE 1
C STREET SITE
(1994 Dollars)

COST ITEM	Land Acres	Building SF	Employees	Percent	COST
Acquistion Cost of Private Property	27.83	275,716			26,443,500
Value of Public Property	1.73	0			540,800
Business Relocation Cost		271,800	284		1,421,800
Infrastructure Relocation					1,000,000
Foundation		1,187,300			43,930,100
New Public Infrastructure					1,150,000
Facility Hard Construction Cost		1,440,000			271,809,500
Soft Costs					51,857,900
Contingency				10%	39,815,400
TOTAL PROJECT COST					**437,969,000**

TABLE 2
NORTHERN AVENUE SITE
(1994 Dollars)

COST ITEM	Land Acres	Building SF	Employees	Percent	COST
Acquistion Cost of Private Property	4.98	156,999			$6,031,000
Value of Public Property	25.72	481,799			27,672,500
Business Relocation Cost		531,873	852		2,927,400
Infrastructure Relocation					4,200,000
Foundation		1,015,950			44,701,800
New Public Infrastructure					75,000,000
Facility Hard Construction Cost		1,440,000			280,512,500
Soft Costs					64,053,700
Contingency				10%	50,509,900
TOTAL PROJECT COST					**$555,608,800**

BREAKDOWN OF PROJECT COSTS

TABLE 3

C Street

INFRASTRUCTURE RELOCATION	Linear Feet	Square Feet	Cost/Unit	Relocation Cost	Allowance	Replace (Y / N)	COMMENTS	COST TO PROJECT
Power Lines	800				1,000,000	Y	115 KVA line to be relocated from B St. and Fargo St.	$1,000,000
Water & Sewer Lines							None	$0
Gas Lines							None	$0
Commercial Rail						N	Rail along Haul Rd. must remain; 22' clearance above	$0
Haul Road							None	$0
Public Roads						N	Fargo St. and part of B St. eliminated	$0
Public Transport Rail							None	$0
Public Parking							None taken	$0
Sub Total								$1,000,000

FOUNDATION	SF	Cost/SF	Cost	Pile Depth		COMMENTS	COST TO PROJECT
Piles						40' to bedrock; foundation is deeper than N. Ave., but non-pile	$0
Excavation & Foundation	1,187,300	$37.00	$43,930,100			Assumes 50% contaminated soil; includes 2 levels for underground parking	$43,930,100
Sub Total							$43,930,100

NEW PUBLIC INFRASTRUCTURE	LF	Cost/LF	Fixed Cost	Total Cost		COMMENTS	COST TO PROJECT
MBTA - Rail Extension				0		None required; 1,000 feet to WTC station	$0
Vehicle Access Improvements				0		Elevated roadway included in building footprint	$0
Pedestrian Access - South Station	3,400	$250.00		850,000		Improvements to sidewalk in addition to Summer St. rebuild by CA/T project	$850,000
- World Trade Ctr.	1,200	$250.00		300,000		Improvements to sidewalk in addition to Viaduct St. rebuild by CA/T project	$300,000
Truck Access				0		None required, direct from Haul Road	$0
Water & Sewer				0		None required	$0
Sub Total							$1,150,000

FACILITY CONSTRUCTION	SF	Cost/SF	Fixed Cost	Total Cost	Number of Spaces	Cost/Space	Total Cost	COMMENTS	COST TO PROJECT
Exposition Center Hard Construction	1,440,000	$175.00		$252,000,000				Includes support facilities and furnishings	$252,000,000
Stand Alone Parking Structure	0				0	10,000	0	300 SF per space	0
Underground Parking Fit-up	1,187,300	$15.00		$17,809,500	2,968	N/A	N/A	400 SF per space	17,809,500
Site Landscaping, paving, etc.			$2,000,000	$2,000,000				Allowance	2,000,000
Sub Total									$271,809,500

SOFT COSTS	Percent of Cost	Applicable Cost Item	Cost Item Amount	Total Soft Cost	Fixed Fee Allowance	COMMENTS	COST TO PROJECT
Design and Engineering	7.00%	All but acq. & relocation	$317,889,600	$22,252,272			$22,252,272
Legal Fees					$3,000,000		3,000,000
21E Study					250,000		250,000
Permitting & EIR					500,000		500,000
Impact Mitigation Costs					2,000,000		2,000,000
Other Professional Services					1,000,000		1,000,000
Project Administration	3.00%	All	$375,297,962	$11,258,939			11,258,939
Financing Fees	3.00%	All	$386,556,901	$11,596,707			11,596,707
Sub Total							$51,857,918

BREAKDOWN OF COSTS

TABLE 4

Northern Avenue

INFRASTRUCTURE RELOCATION	Linear Feet	Square Feet	Cost/Unit	Relocation Cost	Allowance	Replace (Y / N)	COMMENTS	COST TO PROJECT
Power Lines	2,000				1,200,000	Y	115 KVA line to be relocated from Haul Rd.	$1,200,000
Water & Sewer Lines					1,000,000	Y	30" diameter sewer pipe to be relocated	$1,000,000
Gas Lines							None	$0
Commercial Rail						N	Rail along Haul Rd. must remain; 22' clearance above	$0
Haul Road					2,000,000	Y	Terminus moved to Summer St.; no Summer St. entry to MIP	$2,000,000
Public Roads						N	Trilling Way is eliminated	$0
Public Transport Rail							None	$0
Public Parking							None taken	$0
Sub Total								**$4,200,000**

FOUNDATION	SF	Cost/SF	Cost	Pile Depth		COMMENTS	PROJECT
Piles	1,015,950	$20.00	$20,319,000	150		500 lbs. per square foot loading	$20,319,000
Excavation & Foundation	1,015,950	$24.00	$24,382,800			Assumes 50% contaminated soil; includes structure for underground parking	$24,382,800
Sub Total							**$44,701,800**

NEW PUBLIC INFRASTRUCTURE	LF	Cost/LF	Fixed Cost	Total Cost		COMMENTS	COST TO PROJECT
MBTA - Rail Extension	1,750			75,000,000		Extend transitway, add new station; New turnaround required; MPA estimate	$75,000,000
Vehicle Access Improvements				0		None required	$0
Pedestrian Access - Sidwalks	0			0		Extension of transitway eliminates pdestrian requirement	$0
- Bridges				0		None required	$0
Truck Access				0		None required	$0
Water & Sewer				0		None required	$0
Sub Total							**$75,000,000**

FACILITY CONSTRUCTION	SF	Cost/SF	Fixed Cost	Total Cost	Number of Spaces	Cost/Space	Total Cost	COMMENTS	COST TO PROJECT
Exposition Center Hard Construction	1,440,000	$175.00		$252,000,000				Includes support facilities and furnishings	$252,000,000
Stand Alone Parking Structure	300,000	$50.00			1,000	15,000	15,000,000	300 SF per space	15,000,000
Underground Parking Fit-up	767,500	$15.00		$11,512,500	1,919	N/A	N/A	400 SF per space	11,512,500
Site Landscaping, paving, etc.			$2,000,000	$2,000,000				Allowance	2,000,000
Sub Total									**$280,512,500**

SOFT COSTS	Percent of Cost	Applicable Cost Item	Cost Item Amount	Total Soft Cost	Fixed Fee Allowance	COMMENTS	COST TO PROJECT
Design and Engineering	7.00%	All but acq. & relocation	$404,414,300	$28,309,001			$28,309,001
Legal Fees					$3,000,000		3,000,000
21E Study					250,000		250,000
Permitting & EIR					500,000		500,000
Impact Mitigation Costs					2,000,000		2,000,000
Other Professional Services					$1,000,000		1,000,000
Project Administration	3.00%	All	476,104,205	14,283,126			14,283,126
Financing Fees	3.00%	All	$490,387,331	$14,711,620			14,711,620
Sub Total							**$64,053,747**

TABLE 5

STATE: COST TO ACQUIRE SITE AND RELOCATE BUSINESSES

	C STREET			NORTHERN AVENUE	
Property Acquisition	Square Feet	COST		Square Feet	COST
Private Property Acquisition	1,212,358	$26,443,540		216,775	6,030,970
State Property Opportunity Cost	27,490	540,800		662,146	12,812,366
City Property Acquisition	0	0		301,514	10,465,659
Federal Property Acquisition	0	0		136,587	4,394,500
Sub Total	1,239,848	26,984,340		1,317,022	33,703,495
Business Relocation	271,800	1,421,750		531,873	2,927,410
Total Site Acquisition and Relocation Cost		**$28,406,090**			**$36,630,904**

TABLE 6

BUSINESS IMPACT COMPARISON

	C STREET			NORTHERN AVENUE		
	Maritime	Non-maritime	**Total**	Maritime	Non-maritime	**Total**
DISPLACED JOBS	149	135	**284**	280	572	**852**
NUMBER OF RELOCATED BUSINESSES	5	9	**14**	13	26	**39**
BUILDING SQUARE FEET TO RELOCATE	96,180	179,536	**275,716**	162,326	476,472	**638,798**
VALUE OF BUILDINGS DEMOLISHED	$374,000	$2,624,000	**$2,998,000**	$3,758,070	$8,410,820	**$12,168,890**

Appendix 4

Cost Benefit Analysis

This section presents the results of the market and economic analysis, and development cost estimates detailed in the previous three appendices in the form of a pro-forma for the construction period and the first 25 years of operation of the facility after completion.

The first four tables summarize the total annual attendance and spending (Table 1); the total annual economic impact (Table 2); the annual total fiscal benefits (Table 3); and annual operating costs (Table 4) for a new exposition center with 550,000 gross square feet of exhibition space independent of a specific site. The final two tables describe the economic performance of the site specific facilities, comparing the annual net fiscal impacts of a generic exposition center (Table 3) to the net operating deficit, including debt service, for the facility at C-Street (Table 5) and Northern Avenue (Table 6) based on the different development costs of the two sites.

While it is clear that the construction of a new exposition center will bring substantial economic benefit to the Commonwealth over the long term, the total development cost has an impact on the economic performance of the facility through the first 25 years of operation.

As a result of the development cost difference betwen the two sites being considered, a facility at C Street is expected to break even in the year 2009, three years earlier than the same facility sited at Northern Avenue

TABLE 1

ECONOMIC ANALYSIS

Annual Attendance and Spending (From 1996-2025)

	Assumptions		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Convention and Trade Show Attendees																	
Overnight Visitors	70%		0	0	0	0	131,349	141,219	151,669	162,729	174,432	186,809	199,898	213,736	228,360	243,813	260,136
Regional Attendees	30%		0	0	0	0	56,292	60,523	65,001	69,741	74,756	80,061	85,671	91,601	97,869	104,491	111,487
Total Attendees (excl. consumer shows)			0	0	0	0	167,641	201,742	216,670	232,470	249,186	266,870	285,569	305,337	326,229	348,304	371,623
Spending by Attendees	$/Visitor	$/Rgnl.															
Hotel Lodging	$371.55	$0.00	$0	$0	$0	$0	$58,273	$65,785	$74,165	$83,574	$94,064	$105,775	$116,846	$133,427	$149,684	$167,803	$187,990
Hotel Restaurant	$80.14	$40.07	0	0	0	0	15,262	17,230	19,430	21,889	24,636	27,704	31,127	34,946	39,204	43,949	49,237
Other Restaurant	$83.05	$41.53	0	0	0	0	15,816	17,855	20,135	22,684	25,531	28,710	32,257	36,215	40,627	45,545	51,024
Hospitality Suites	$37.88	$16.94	0	0	0	0	7,214	6,144	9,184	10,346	11,645	13,095	14,713	16,516	16,531	20,774	23,273
Entertainment	$36.43	$16.22	0	0	0	0	6,938	7,832	6,832	9,950	11,199	12,594	14,150	15,886	17,821	19,979	22,382
Retail	$59.74	$29.87	0	0	0	0	11,377	12,844	14,484	16,317	16,365	20,652	23,204	26,050	29,224	32,762	36,703
Local Transportation	$31.33	$15.67	0	0	0	0	5,967	6,736	7,596	6,557	9,631	10,831	12,169	13,662	15,326	17,162	19,249
Other	$28.41	$14.21	0	0	0	0	5,411	6,108	6,888	7,760	6,734	9,821	11,035	12,368	13,898	15,580	17,455
Total Spending by Attendees			$0	$0	$0	$0	$126,260	$142,530	$160,730	$161,080	$203,810	$229,180	$257,500	$289,090	$324,320	$363,570	$407,310

	Assumptions		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Convention and Trade Show Attendees																	
Overnight Visitors	70%		260,136	260,136	260,136	260,136	260,136	260,136	260,136	260,136	260,136	260,136	260,136	260,136	260,136	260,136	260,136
Regional Attendees	30%		111,487	111,487	111,487	111,487	111,487	111,487	111,487	111,487	111,487	111,487	111,487	111,487	111,487	111,487	111,487
Total Attendees (excl. consumer shows)			371,623	371,623	371,623	371,623	371,623	371,623	371,623	371,623	371,623	371,623	371,623	371,623	371,623	371,623	371,623
Spending by Attendees	$/Visitor	$/Rgnl.															
Hotel Lodging	$371.55	$0.00	$197,389	$207,259	$217,622	$228,503	$239,928	$251,924	$264,520	$277,747	$291,634	$306,216	$321,526	$337,603	$354,483	$372,207	$390,817
Hotel Restaurant	$80.14	$40.07	51,898	54,283	56,997	59,847	62,840	65,982	69,281	72,745	76,382	80,201	84,211	88,422	92,843	97,485	102,359
Other Restaurant	$83.05	$41.53	53,576	56,254	59,067	62,020	65,121	68,378	71,796	75,386	79,156	83,113	87,269	91,632	96,214	101,025	106,076
Hospitality Suites	$37.88	$16.94	24,436	25,658	26,941	28,288	29,703	31,188	32,747	34,384	36,104	37,909	39,804	41,795	43,884	46,078	48,382
Entertainment	$36.43	$16.22	23,501	24,676	25,910	27,205	28,566	29,994	31,494	33,068	34,722	36,458	38,281	40,195	42,204	44,315	46,530
Retail	$59.74	$29.87	38,538	40,465	42,488	44,613	46,844	49,186	51,645	54,227	56,939	59,786	62,775	65,914	69,209	72,670	76,303
Local Transportation	$31.33	$15.67	20,211	21,222	22,283	23,397	24,567	25,795	27,085	28,439	29,861	31,354	32,922	34,568	36,296	38,111	40,016
Other	$28.41	$14.21	16,327	19,244	20,206	21,216	22,277	23,391	24,560	25,788	27,078	28,432	29,853	31,346	32,913	34,559	36,287
Total Spending by Attendees			$427,680	$449,060	$471,510	$495,090	$519,840	$545,840	$573,130	$601,780	$631,870	$663,470	$696,640	$731,470	$768,050	$806,450	$846,770

NOTES

- Attendance estimates are based upon a conservative period of 10 years from opening required to attain stabilized occupancy
- Average duration of visitor stay is 3.2 nights
- Regional attendees spend nothing on hotel rooms and 50% as much as visitors on all other categories
- Inflation is assumed to be 3% through the year 2000 and 5% thereafter

TABLE 2
ANNUAL ECONOMIC IMPACT (1996-2025)

	Assumptions	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Off Site Impact																
Number of Jobs Created		0	0	0	0	3,049	3,348	3,647	3,946	4,245	4,544	4,843	5,142	5,441	5,740	6,039
New Earnings	$19,883 /job	$0	$0	$0	$0	$72,385	$83,457	$95,456	$108,446	$122,497	$137,681	$154,078	$171,770	$190,846	$211,400	$233,532
Total Output	1.9631 multiplier	$0	$0	$0	$0	$231,110	$260,890	$294,204	$331,454	$373,060	$419,497	$471,335	$529,158	$593,645	$665,488	$745,551
On Site Impact																
Number of Jobs Created		2,215	2,215	2,215	2,215	463	469	475	480	486	492	498	503	509	515	521
New Earnings - Direct On Site	$20,197 /job	$0	$0	$0	$0	$5,950	$7,012	$7,362	$7,730	$8,117	$8,523	$8,949	$9,396	$9,866	$10,359	$10,877
New Earnings - Indirect	$20,389 /job	$0	$0	$0	$0	$6,778	$6,620	$7,079	$7,574	$8,110	$8,891	$9,320	$10,001	$10,740	$11,543	$12,414
New Earnings - Facility Constructi	$28,817 /job	$63,816	$65,730	$67,702	$69,733	0	0	0	0	0	0	0	0	0	0	0
Total New Earnings		$63,816	$65,730	$67,702	$69,733	$12,728	$13,632	$14,441	$15,304	$16,227	$17,213	$16,268	$19,397	$20,606	$21,902	$23,292
Total Output	1.9709 multiplier	200,336	206,346	212,537	216,913	$38,090	$40,373	$42,813	$45,421	$48,212	$51,200	$54,401	$57,833	$61,515	$65,467	$69,712
Hotel Construction Impact																
Number of New Rooms Developed		412	412	412	412	326	326	326	326	326	326	326	326	326	326	0
Number of Jobs Created		845	845	845	845	669	669	669	669	669	669	669	669	669	669	0
New Earnings	$32,022 /job	$27,066	$27,878	$28,714	$29,575	$24,096	$25,301	$26,566	$27,895	$29,289	$30,754	$32,292	$33,906	$35,601	$37,381	$0
Total Output	See note below	$67,024	$69,022	$71,080	$73,199	$59,836	$62,600	$65,713	$68,982	$72,413	$76,017	$79,800	$83,773	$87,945	$92,325	$0
Total Economic Impact																
Total Jobs Created		3,060	3,060	3,060	3,060	4,161	4,486	4,790	5,095	5,400	5,705	6,009	6,314	6,619	6,923	6,580
Total New Earnings		$90,862	$93,608	$96,416	$99,309	$109,209	$122,390	$136,463	$151,646	$168,013	$165,648	$204,637	$225,073	$247,053	$270,684	$256,824
Total Output		$267,361	$275,369	$283,616	$292,112	$328,836	$363,864	$402,730	$445,857	$493,686	$546,715	$605,537	$670,765	$743,104	$823,279	$815,263

	Assumptions	2011	2012	2013	2014	2015	2016	2017	2016	2019	2020	2021	2022	2023	2024	2025
Off Site Impact																
Number of Jobs Created		6,341	6,658	6,991	7,340	7,707	6,093	6,498	8,922	9,368	9,837	10,329	10,845	11,386	11,957	12,555
New Earnings	#DIV/0! /job	$257,472	$283,860	$312,954	$345,035	$380,398	$419,395	$462,381	$509,770	$562,022	$619,635	$683,145	$753,165	$830,371	$915,482	$1,009,315
Total Output	1.9631 multiplier	$782,838	$821,972	$863,064	$906,227	$951,529	$999,121	$1,049,073	$1,101,514	$1,156,592	$1,214,434	$1,275,149	$1,338,903	$1,405,860	$1,476,149	$1,549,951
On Site Impact																
Number of Jobs Created		521	521	521	521	521	521	521	521	521	521	521	521	521	521	521
New Earnings - Direct On Site	$20,197 /job	$11,421	$11,992	$12,592	$13,221	$13,862	$14,577	$15,305	$16,071	$16,874	$17,716	$16,604	$19,534	$20,511	$21,536	$22,613
New Earnings - Indirect	$20,389 /job	$13,035	$13,687	$14,371	$15,090	$15,844	$16,636	$17,468	$16,342	$19,259	$20,222	$21,233	$22,294	$23,409	$24,580	$25,809
New Earnings - Facility Constructi	#DIV/0! /job	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Earnings		$24,456	$25,679	$26,963	$28,311	$29,727	$31,213	$32,774	$34,412	$36,133	$37,940	$39,837	$41,828	$43,920	$46,116	$48,422
Total Output	1.9709 multiplier	$73,197	$76,857	$80,700	$84,735	$88,972	$93,420	$98,091	$102,996	$108,146	$113,553	$119,231	$125,192	$131,452	$138,024	$144,926
Hotel Construction Impact																
Number of New Rooms Developed		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Jobs Created		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New Earnings	/job	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Output	See note below	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Economic Impact																
Total Jobs Created		6,862	7,179	7,511	7,861	8,228	6,613	9,016	9,443	9,889	10,358	10,849	11,366	11,908	12,477	13,075
Total New Earnings		$281,928	$309,540	$339,917	$373,346	$410,125	$450,608	$495,155	$544,162	$598,155	$657,575	$722,981	$794,983	$874,291	$961,597	$1,057,737
Total Output		$856,035	$898,829	$943,764	$990,962	$1,040,501	$1,092,542	$1,147,165	$1,204,510	$1,264,738	$1,327,987	$1,394,380	$1,464,095	$1,537,312	$1,614,173	$1,894,877

TABLE 3

ANNUAL FISCAL BENEFITS (FROM 1996-2025)

	Assumptions		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Direct Off Site Taxes from Spending	Tax Rate																
Room OccupancY Tax CitiEs & Towns	4.00%		$0	$0	$0	$0	$2,619	$2,957	$3,335	$3,757	$4,228	$4,755	$5,342	$5,986	$6,729	$7,543	$8,451
Room Occupancy Tax State	5.70%		0	0	0	0	3,733	4,214	4,752	5,353	6,025	6,776	7,613	8,547	9,588	10,749	12,042
Meals Tax	5.00%		0	0	0	0	1,554	1,754	1,978	2,229	2,508	2,821	3,169	3,558	3,992	4,475	5,013
Sales Tax	5.00%		0	0	0	0	569	642	724	816	918	1,033	1,160	1,303	1,461	1,638	1,835
Total Direct Off Site Tax Revenue			$0	$0	$0	$0	$8,475	$9,568	$10,789	$12,155	$13,680	$15,384	$17,285	$19,405	$21,770	$24,405	$27,341
Indirect Off Site Taxes	Tax Rate	Applied to															
Income Tax	5.95%	81.00%	0	0	0	0	3,489	4,022	4,601	5,227	5,904	6,636	7,426	8,278	9,198	10,188	11,255
Corporate Tax	9.00%	12.56%	0	0	0	0	818	943	1,079	1,226	1,385	1,556	1,742	1,942	2,157	2,390	2,640
Sales Tax	5.00%	22.90%	0	0	0	0	829	956	1,093	1,242	1,403	1,576	1,764	1,967	2,185	2,421	2,674
Total Indirect Off Site Tax Revenue			$0	$0	$0	$0	$5,136	$5,921	$6,773	$7,694	$8,691	$9,768	$10,932	$12,187	$13,540	$14,999	$16,569
On Site Taxes - Direct & Indirect																	
Income Tax			3,263	3,361	3,462	3,565	556	589	625	663	704	747	794	844	898	956	1,018
Corporate Tax			792	788	812	836	77	75	80	86	92	98	105	113	121	130	140
Sales Tax			775	798	822	847	132	140	148	158	167	178	189	201	213	227	242
Total On Site Taxes			$4,830	$4,947	$5,096	$5,249	$765	$804	$853	$906	$963	$1,023	$1,088	$1,158	$1,233	$1,313	$1,400
Hotel Construction Period Taxes																	
Income Tax			1,303	1,342	1,382	1,423	1,160	1,218	1,279	1,342	1,410	1,480	1,554	1,632	1,713	1,799	0
Corporate Tax			306	315	324	334	272	286	300	315	331	348	365	383	402	422	0
Sales Tax			692	713	735	757	616	647	680	714	749	787	826	867	911	956	0
Total Hotel Construction Taxes			$2,301	$2,370	$2,441	$2,514	$2,048	$2,151	$2,258	$2,371	$2,490	$2,614	$2,745	$2,882	$3,026	$3,178	$0
TOTAL FISCAL IMPACT			$7,130	$7,317	$7,536	$7,763	$16,424	$18,444	$20,674	$23,126	$25,824	$28,789	$32,049	$35,632	$39,569	$43,894	$45,309

	Assumptions		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Direct Off Site Taxes from Spending	Tax Rate																
Room OccupancY Tax CitiEs & Towns	4.00%		$8,873	$9,317	$9,783	$10,272	$10,785	$11,324	$11,891	$12,485	$13,110	$13,765	$14,453	$15,176	$15,935	$16,731	$17,568
Room Occupancy Tax State	5.70%		12,644	13,276	13,940	14,637	15,369	16,137	16,944	17,791	18,681	19,615	20,596	21,626	22,707	23,842	25,034
Meals Tax	5.00%		5,264	5,527	5,803	6,093	6,398	6,718	7,054	7,407	7,777	8,166	8,574	9,003	9,453	9,925	10,422
Sales Tax	5.00%		1,927	2,023	2,124	2,231	2,342	2,459	2,582	2,711	2,847	2,989	3,139	3,296	3,460	3,633	3,815
Total Direct Off Site Tax Revenue			$28,708	$30,143	$31,650	$33,233	$34,894	$36,639	$38,471	$40,395	$42,414	$44,535	$46,762	$49,100	$51,555	$54,133	$56,839
Indirect Off Site Taxes	Tax Rate	Applied to															
Income Tax	5.95%	81.00%	12,409	13,681	15,083	16,629	18,333	20,213	22,284	24,568	27,087	29,863	32,924	36,299	40,020	44,122	48,644
Corporate Tax	9.00%	12.56%	2,910	3,209	3,538	3,900	4,300	4,741	5,227	5,762	6,353	7,004	7,722	8,514	9,387	10,349	11,409
Sales Tax	5.00%	22.90%	2,948	3,250	3,583	3,951	4,356	4,802	5,294	5,837	6,435	7,095	7,822	8,624	9,508	10,482	11,557
Total Indirect Off Site Tax Revenue			$18,267	$20,140	$22,204	$24,480	$26,989	$29,756	$32,805	$36,168	$39,875	$43,963	$48,468	$53,436	$58,914	$64,953	$71,610
On Site Taxes - Direct & Indirect																	
Income Tax			1,069	1,122	1,178	1,237	1,299	1,364	1,432	1,504	1,579	1,658	1,741	1,828	1,919	2,015	2,116
Corporate Tax			147	155	162	171	179	188	197	207	218	229	240	252	265	278	292
Sales Tax			254	267	280	294	309	324	340	357	375	394	414	434	456	479	503
Total On Site Taxes			$1,470	$1,543	$1,620	$1,701	$1,786	$1,876	$1,970	$2,068	$2,171	$2,280	$2,394	$2,514	$2,639	$2,771	$2,910
Hotel Construction Period Taxes																	
Income Tax			0	0	0	0	0	0	0	0	0	0					
Corporate Tax			0	0	0	0	0	0	0	0	0	0					
Sales Tax			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Hotel Construction Taxes			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

TABLE 4
ANNUAL OPERATING COSTS (FROM 1996-2025)

	Assumptions	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	550,000 Sq.Ft.															
Occupancy																
Occupied Sq. Ft. Days: Conventions		0	0	0	0	46,450	49,941	53,636	57,547	61,686	66,063	70,692	75,585	80,757	66,223	91,994
Consumer Shows	15.0% occupancy	0	0	0	0	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400
Total Occupied Sq. Ft. Days (OSFD)		0	0	0	0	72,850	76,341	80,036	83,947	88,086	92,463	97,092	101,985	107,157	112,623	118,394
Occupancy Rate	320 days/yr.	0%	0%	0%	0%	41%	43%	45%	48%	50%	53%	55%	58%	61%	64%	67%
Operating Income	1994 $															
Rent: Conventions/Shows	$0.045 /OSFD	$0	$0	$0	$0	$3,955	$4,352	$4,790	$5,276	$5,813	$6,406	$7,064	$7,790	$8,595	$9,485	$10,489
Event Services	$0.039 /OSFD	0	0	0	0	3,392	3,732	4,108	4,524	4,985	5,494	6,057	6,681	7,371	6,134	6,978
F & B Commissions: Exposition	$0.023 /OSFD	0	0	0	0	2,024	2,227	2,451	2,700	2,975	3,279	3,615	3,987	4,398	4,654	5,358
Parking	$0.006 /OSFD	0	0	0	0	528	581	639	704	776	655	943	1,040	1,147	1,266	1,397
Rent from Support Space	$7.00 100,000	0	0	0	0	636	857	678	900	923	946	969	994	1,016	1,044	1,070
Other	5.0%	0	0	0	0	495	545	599	660	727	802	884	975	1,076	1,167	1,310
Total Operating Revenue		0	0	0	0	11,229	12,292	13,467	14,764	16,197	17,781	19,532	21,466	23,805	25,969	28,583
Operating Expenses - Fixed	$23.61 /SF	0	0	0	0	(15,505)	(16,281)	(17,095)	(17,949)	(18,847)	(19,789)	(20,779)	(21,816)	(22,909)	(24,054)	(25,257)
-Variable	$14.05 /SF	0	0	0	0	(3,821)	(4,204)	(4,628)	(5,096)	(5,615)	(6,189)	(6,824)	(7,526)	(8,303)	(9,163)	(10,114)
Net Operating Income (Loss)		0	0	0	0	(8,097)	(8,192)	(8,256)	(8,282)	(8,265)	(8,197)	(8,071)	(7,877)	(7,807)	(7,247)	(6,788)

	Assumptions	2011	2012	2013	2014	2015	2016	2017	2016	2019	2020	2021	2022	2023	2024	2025
	550,000 Sq.Ft.															
Occupancy																
Occupied Sq. Ft. Days: Conventions		91,994	91,994	91,994	91,994	91,994	91,994	91,994	91,994	91,994	91,994	91,994	91,994	91,994	91,994	91,994
Consumer Shows	15.0% occupancy	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400	26,400
Total Occupied Sq. Ft. Days (OSFD)		116,394	116,394	118,394	116,394	116,394	116,394	116,394	116,394	116,394	116,394	116,394	116,394	118,394	116,394	116,394
Occupancy Rate	320 days/yr.	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%	67%
Operating Income	1994 $															
Rent: Conventions/Shows	$0.045 /OSFD	$10,993	$11,543	$12,120	$12,726	$13,362	$14,030	$14,732	$15,468	$16,242	$17,054	$17,906	$16,802	$19,742	$20,729	$21,765
Event Services	$0.039 /OSFD	9,427	9,898	10,393	10,913	11,459	12,032	12,633	13,265	13,928	14,625	15,356	16,124	16,930	17,776	16,665
F & B Commissions: Exposition	$0.023 /OSFD	5,626	5,907	6,202	6,512	6,838	7,180	7,539	7,916	6,312	6,727	9,164	9,622	10,103	10,608	11,138
Parking	$0.006 /OSFD	1,467	1,540	1,617	1,698	1,783	1,872	1,966	2,064	2,167	2,276	2,390	2,509	2,635	2,766	2,905
Rent from Support Space	$7.00 100,000	1,097	1,124	1,152	1,161	1,211	1,241	1,272	1,304	1,336	1,370	1,404	1,439	1,475	1,512	1,550
Other	5.0%	1,376	1,444	1,517	1,592	1,672	1,756	1,843	1,936	2,032	2,134	2,241	2,353	2,470	2,594	2,724
Total Operating Revenue		29,985	31,457	33,002	34,623	36,324	38,110	39,985	41,952	44,017	46,165	48,460	50,848	53,354	55,985	58,747
Operating Expenses - Fixed	$0.00 /SF	(26,520)	(27,846)	(29,238)	(30,700)	(32,235)	(33,846)	(35,539)	(37,316)	(39,162)	(41,141)	(43,198)	(45,357)	(47,625)	(50,007)	(52,507)
-Variable	$0.00 /SF	(10,619)	(11,150)	(11,708)	(12,293)	(12,908)	(13,553)	(14,231)	(14,943)	(15,690)	(16,474)	(17,298)	(16,163)	(19,071)	(20,025)	(21,026)
Net Operating Income (Loss)		(7,154)	(7,539)	(7,944)	(8,370)	(8,816)	(9,289)	(9,785)	(10,306)	(10,854)	(11,430)	(12,036)	(12,673)	(13,342)	(14,046)	(14,786)

NOTES

- Consumer Shows provide additional operating revenue, but do not affect incremental spending and fiscal benefits
- Allowing sufficient time for change over, 60%-70% is generally considered to be maximum occupancy
- Operating revenues and expenses are based upon the February, 1993 Feasibility Analysis performed by Coopers & Lybrand

- Rent from Support Space represents net income from a 100,000 SF portion of the facility leased for restaurants, shops, and entertainment
- The breakdown of fixed vs. variable operating expenses is based upon BRA estimates
- Financing assumes a 30 year general obligation bond issued by the Commonwealth at a 6.5% yield. If a revenue bond were issued, debt service payments could be scheduled to better reflect the facility construction and lease up periods. The principal amount of the debt equals the estimated development cost at the C Street site, inflated for two years.
- Interest income is earned on the unspent portion of development funds and is based upon a negative arbitrage of 1%

TABLE 5
ECONOMIC PERFORMANCE FOR C-STREET FACILITY

	Assumptions	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Financing																
Debt Service (Principal)	$464.7 million															
Terms (Rate,Term)	6.50% 30	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)
Interest Income	5.50% /year	23,001	15,334	10,223	5,111	0	0	0	0	0	0	0	0	0	0	0
NET INCOME (LOSS)		($10,586)	($16,252)	($23,363)	($28,473)	($41,681)	($41,775)	($41,837)	($41,862)	($41,844)	($41,775)	($41,648)	($41,454)	($41,162)	($40,822)	($40,361)

TOTAL FISCAL IMPACT		$7,130	$7,317	$7,536	$7,763	$16,266	$16,279	$20,500	$22,944	$25,633	$28,589	$31,839	$35,411	$39,337	$43,650	$45,309
NET INCOME (LOSS)		($10,586)	($16,252)	($23,363)	($28,473)	($41,681)	($41,775)	($41,837)	($41,862)	($41,844)	($41,775)	($41,648)	($41,454)	($41,162)	($40,822)	($40,361)
NET ECONOMIC IMPACT		($3,456)	($10,936)	($15,826)	($20,711)	($25,414)	($23,496)	($21,337)	($16,916)	($16,211)	($13,167)	($9,810)	($6,043)	($1,846)	$2,828	$4,948

	Assumptions	2011	2012	2013	2014	2015	2016	2017	2016	2019	2020	2021	2022	2023	2024	2025
Financing																
Debt Service (Principal)	$438.0 million															
Terms (Rate,Term)	6.50% 30	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)	(35,584)
Interest Income	5.50% /year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET INCOME (LOSS)		($7,154)	($7,539)	($7,944)	($8,370)	($8,816)	($9,289)	($9,785)	($10,306)	($10,854)	($11,430)	($12,036)	($12,673)	($13,342)	($14,046)	($14,786)

TOTAL FISCAL IMPACT		$48,445	$51,826	$55,474	$59,414	$63,670	$68,271	$73,246	$78,630	$84,461	$90,778	$97,624	$105,050	$113,108	$121,857	$131,359
NET INCOME (LOSS)		($7,154)	($7,539)	($7,944)	($8,370)	($8,818)	($9,289)	($9,785)	($10,306)	($10,854)	($11,430)	($12,036)	($12,673)	($13,342)	($14,046)	($14,786)
NET ECONOMIC IMPACT		$41,291	$44,287	$47,530	$51,044	$54,851	$58,981	$63,461	$68,324	$73,607	$79,348	$85,589	$92,377	$99,766	$107,810	$116,573

NOTES

- Consumer Shows provide additional operating revenue, but do not affect incremental spending and fiscal benefits
- Allowing sufficient time for change over, 60%-70% is generally considered to be maximum occupancy
- Operating revenues and expenses are based upon the February, 1993 Feasibility Analysis performed by Coopers & Lybrand
- Rent from Support Space represents net income from a 100,000 SF portion of the facility leased for restaurants, shops, and entertainment
- The breakdown of fixed vs. variable operating expenses is based upon BRA estimates
- Financing assumes a 30 year general obligation bond issued by the Commonwealth at a 6.5% yield. If a revenue bond were issued, debt service payments could be scheduled to better reflect the facility construction and lease up periods. The principal amount of the debt equals the estimated development cost at the C Street site, inflated for two years.
- Interest income is earned on the unspent portion of development funds and is based upon a negative arbitrage of 1%

TABLE 6
BOSTON EXPOSITION CENTER (NORTHERN AVENUE)

Debt Service (Principal)	Assumptions	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	589.4 million															
Terms (Rate,Term)	0.065 30	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5
Interest Income	0.055 /year	29177.08	19451.39	12967.59	6483.796	0	0	0	0	0	0	0	0	0	0	0
NET INCOME (LOSS)		-15960.42	-25686.11	-32169.91	-38653.71	-53234.62	-53329.66	-53393.16	-53419.43	-53402.13	-53334.44	-53208.27	-53014.88	-52744.18	-52384.95	-51925.4
TOTAL FISCAL IMPACT		7130.387	7316.98	7536.49	7762.584	15387.93	17356.1	19531.552	21927.3	24564.82	27467.51	30661.362	34174.7	38038.63	42287.42	45309.31
NET ECONOMIC IMPACT		-8830.033	-18369.13	-24633.42	-30891.12	-37846.68	-35973.56	-33861.61	-31492.12	-28837.32	-25866.93	-22546.9	-18840.18	-14705.55	-10097.53	-6616.06

	Assumptions	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Debt Service (Principal)	589.4 million															
Terms (Rate,Term)	0.065 30	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5	-45137.5
Interest Income	0.055 /year	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NET INCOME (LOSS)		-52291.51	-52676.63	-53081.69	-53507.7	-53955.74	-54426.91	-54922.4	-55443.44	-55991.33	-56567.43	-57173.16	-57810.04	-58479.64	-59183.63	-59923.7
TOTAL FISCAL IMPACT		48444.84	51825.94	55474.42	59414.06	63669.73	68270.56	73246.15	78630.36	84460.74	90777.64	97624.309	105050	113108.4	121856.6	131359.2
NET ECONOMIC IMPACT		-3846.676	-850.6934	2392.733	5906.361	9713.99	13843.65	18323.747	23186.91	28469.41	34210.21	40451.144	47239.93	54628.73	62672.95	71435.47

Appendix 5

Hotel Demand From Major Exposition Center Events

A new exposition center in Boston can be expected to bring additional visitors to the city and create additional demand for hotel, meals, retail sales, transportation and other services in the city and throughout the metropolitan area. The greatest employment and fiscal benefits for Boston and Massachusetts will be those associated with hotel use. The most basic issues are: How many new hotel rooms might be developed within the city and the metropolitan area in response to increased demand from new conventions and trade shows?, and: How many additional room-sale nights will result?

Summary of Conclusions:
A new exposition facility containing an exposition hall with about 550,000 gross square feet of exhibition space could induce the development of up to 3,259 new hotel rooms in the Boston area by the year 2010.

The fiscal yield from likely scenarios could include $4.9 million to $8.1 million in property tax revenues (average of $1,500 to $2,500/room) if these new hotels were developed in Boston and were fully taxable (i.e. not built on government owned land.). The total amounts of state and municipal hotel occupancy taxes were estimated and described in Appendix II.

Only a portion of the net increase in hotel business and of the municipal hotel occupancy taxes that exposition center visitors generate will go to the city of Boston. Much will go to other cities and towns in the metropolitan area. Boston may receive between 27% to 63% of municipal hotel room occupancy taxes arising from events taking place at Boston's new exposition center.

The hotel demand originating from events at the new Exposition Center will not only allow for the growth of the metropolitan area's hotel stock; it will require an increase in the number of available rooms. Large events held during popular months may absorb up to one third of the metropolitan area's rooms, forcing some business or tourist visitors to reschedule or otherwise change their plans.

Additional Demand for Hotel Rooms and New Hotel Development:

Attendance from national trade shows and related professional association gatherings (those drawing significant attendance from out of town for extended stays) was estimated at 187,641 visitors during the year 2000, the first full year of operation, and 371,621 visitors by 2010, when operations stabilize at full capacity utilization, as described in Appendix 1. An estimated 70% of these attendees will stay an average of 3.2 days in a Boston area hotel, as stated in Appendix 2. With the average event drawing about 14,434 attendees, hotel demand for a typical large event will require (14,434 x 70% =) 10,104 rooms each night over the entire 3.2 day period, generating 32,332 room-occupancy-nights of demand for each event. This would require 84% of Boston's current 11,966 hotel room supply , or 29% of the metropolitan area's hotel rooms (estimated at 35,000 by Smith Travel Research).

Total occupancy-days generated over the course of the year 2000 could support 1,646 hotel rooms at 70% annual occupancy if this demand were evenly distributed throughout the year. By year 2005 this theoretical maximum of hotel rooms supported by convention and trade show visitors would rise to 2,340; and by 2010, when operations stabilize at full utilization of exposition hall capacity, 3,259 hotel rooms could be supported by evenly distributed demand. (For example: in the year 2010 our 371,621 x 0.70 x 3.2 = 832,431 hotel occupancy days of business, if evenly spread throughout the year, could support (832,431/(0.7 x 365) =) 3,259 hotel rooms at a favorable 70% occupancy rate.)

However, this demand for hotel rooms would not be evenly distributed throughout the year, and the development and use of hotel rooms will be influenced by the seasonality of demand, the position of Boston and its hotels in the regional market, and the two general rules that: 1) no hotel may enjoy occupancy rates above 100% on any given day, and 2) all hotels must enjoy average annual occupancy rates of at least 65% to 70% over the long term if they are to prosper and stimulate further hotel development. These issues are illustrated in the following tables: "The Best Boston Can Do by Having Large Conventions in Slow Months" and "The Worst Boston Can Do by Having Large Conventions in Busy Months."

The scenarios illustrated in the tables go like this:

Well in advance of a large event, blocks of rooms are reserved for event attendees. Even if all or most of them could arrange to stay in Boston hotels close to the exposition center, they would displace numerous tourists and business visitors who have not reserved rooms as far in advance. These normal baseline demand market guests of Boston hotels would have to find ac-

commodations in neighboring communities. Even if every room in Boston is filled before this displacement and spillover process begins, Boston will enjoy only the additional business equal to the number of hotel rooms that would normally be empty on this particular day. All demand in excess of this number of normally empty rooms will benefit other metropolitan area hotels. Of course, some of these displaced tourists and business travelers may be able to reschedule their stay and find accommodations in Boston when rooms here become available again, but we cannot count on this.

Against this background, the illustrated scenarios envision the development of additional hotel rooms. These new hotels cannot all be built at once, and we have already seen that the demand generated by exposition center guests will also be phased in as operations at the exposition center mature to full capacity and stable operating level. So a (purely hypothetical) rational developer would want to build enough rooms so that each new hotel could experience acceptable annual occupancy (65% to 70%) if its performance equaled the market average. At the same time, city and state planners and event organizers will want to have an adequate supply of rooms to accommodate all potential visitors so that our city and region do not miss any opportunity to host all visitors at the place and time that these visitors desire.

RESULTS:

Boston is already an excellent candidate for the development of additional hotels, having enjoyed a 75% average occupancy rate in 1993, with still further growth in room sales over 1994. The tables reflect this baseline situation and examine what would happen if 1,646 new rooms were built in Boston now, with baseline demand increased by the projected year 2000 exposition center business. All of this is detailed month by month, since monthly occupancy rates show strong seasonal variation. After listing baseline demand statistics such as monthly occupancy rates and the number of occupied and available rooms on an average night, the tables look for accommodations for new exposition center demand. Spillover Demand represents the number of additional rooms needed after every Available Room in the city of Boston is filled. The chart titled, **Convention Demand Captured ... with 1,646 New Rooms** is the sum of Available Rooms from the current (1994) stock of rooms plus the 1,646 new rooms, all of which are presumed to fill. The "% Capture" is the portion of all 10,104 rooms needed by event visitors that come from the available supply in the city of Boston, including the 1,646 new rooms. Total room nights are then calculated, and a new occupancy rate results for the enlarged stock of hotel rooms in the city.

Actual results would be somewhere between “The Best Boston Can Do” and “The Worst Boston Can Do”, but probably closer to "The Worst" because the events in question have the same seasonal patterns as baseline demand. With 1,646 new hotel rooms, Boston would capture between 1/4 and 2/3 of the net increase in room demand.

“The Worst Boston Can Do” scenario points out the limitations imposed by the current size of the Boston metropolitan hotel market. On a typical October day Boston’s hotels will have just over 1,000 rooms available after normal baseline demand is satisfied. The 23,000 rooms in the rest of the metropolitan area might be around 85% full, leaving only 3,500 or so rooms there empty. Adding to this the 1,646 rooms to be built under this scenario provides a total of 6,146 rooms that would be available for Exposition Center attendees, requiring the displacement or rescheduling of nearly 4,000 baseline demand hotel guests if a highly attended large event were to occur during this most popular month. However, even in this worst case Boston’s overall annual occupancy rate remains in the very healthy range of 69% to 71%, indicating room in the market for further supply growth in the city. And in fact, further hotel expansion in other cities and towns in the metropolitan area is likely also.

The need for exposition center activity and occupancy to grow apace with area hotel supply can be an advantage rather than a problem. The market analysis presented in this report acknowledges the need for the exposition center to develop its trade show market over time. The simultaneous growth of baseline supply and demand for hotel and other visitor services, along with new supply and demand coming from the exposition center, will increase Boston’s and Massachusetts’ capacity to host other major events.

An important set of issues that this purely quantitative model cannot address involves the location, price point and type of hotels to be developed in response to exposition center demand. These issues are important to the further planning for the exposition center. For example, Boston’s Downtown/Back Bay hotels are booming, with occupancy rates averaging 76% in 1993, compared to 60% to 64% for Route 128 sub-markets. Sites near downtown or between downtown and the exposition center are clearly the most desirable because they are proximate to this existing healthy demand as well as close to the exposition center itself. However, luxury and higher priced hotels such as those that now dominate Boston’s downtown may not be optimally attractive to exposition event visitors nor to the additional tourists and business visitors that convention hotels will have to attract in order to maintain adequate occupancy during off weeks when no major event is taking place.

FIGURE 1

The Worst Boston Can Do by Having Large Conventons in Busy Months:

				Convention Demand							
	Days	Occupancy Rate	Occupied Rooms	Current Rooms 11,966 Available Rooms	Total Rooms 10,104 Spillover Demand	Captured for 3.2 days With 1,646 New Rooms	% Capture	Times Number Events	Added Room Nights (3.2 nights)	Baseline Room Nights	Total Room Nights
Jan.	31	56%	6,713	5,253	0	0	0%			208,101	208,101
Feb.	28	58%	6,904	5,062	0	0	0%			193,323	193,323
March	31	67%	8,041	3,925	0	0	0%			249,276	249,276
April	30	75%	8,975	2,992	0	0	0%			269,235	269,235
May	31	80%	9,597	2,369	0	0	0%			297,499	297,499
June	30	84%	9,992	1,974	8,130	3,620	36%	2	23,170	299,748	322,919
July	31	82%	9,752	2,214	7,890	3,860	38%	2	24,702	302,321	327,023
Aug.	31	88%	10,482	1,484	8,620	3,130	31%	3	30,046	324,949	354,995
Sept.	30	88%	10,554	1,412	8,692	3,058	30%	3	29,357	316,620	345,977
Oct.	31	92%	10,949	1,017	9,087	2,663	26%	3	25,566	339,416	364,981
Nov.	30	77%	9,202	2,764	0	0	0%			276,056	276,056
Dec.	31	53%	6,294	5,672	0	0	0%			195,118	195,118
	365	75%					27%		132,841	3,271,660	3,404,501

FIGURE 2

The Best Boston Can Do by Having Large Conventons in Slow Months:

				Convention Demand							
	Days	Occupancy Rate	Occupied Rooms	Current Rooms 11,966 Available Rooms	Total Rooms 10,104 Spillover Demand	Captured for 3.2 days With 1,646 New Rooms	% Capture	Times Number Events	Added Room Nights (3.2 nights)	Baseline Room Nights	Total Room Nights
Jan.	31	56%	6,713	5,253	4,851	6,909	68%	3	66,327	208,101	274,428
Feb.	28	58%	6,904	5,062	5,042	6,718	66%	3	64,489	193,323	257,812
March	31	67%	8,041	3,925	6,179	5,581	55%	2	35,717	249,276	284,993
April	30	75%	8,975	2,992	0	0	0%			269,235	269,235
May	31	80%	9,597	2,369	0	0	0%			297,499	297,499
June	30	84%	9,992	1,974	0	0	0%			299,748	299,748
July	31	82%	9,752	2,214	0	0	0%			302,321	302,321
Aug.	31	88%	10,482	1,484	0	0	0%			324,949	324,949
Sept.	30	88%	10,554	1,412	0	0	0%			316,620	316,620
Oct.	31	92%	10,949	1,017	0	0	0%			339,416	339,416
Nov.	30	77%	9,202	2,764	7,340	4,420	44%	2	28,289	276,056	304,345
Dec.	31	53%	6,294	5,672	4,432	7,328	73%	3	70,348	195,118	265,465
	365	75%					63%		265,170	3,271,660	3,536,830

Source: Occupancy rates from PKF Consulting and Pinacle Advisory Group
Room stock estimates by Amatruda Assoc.
Technique from Neptune Research

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